

A black and white photograph of a swampy forest. Large, dark tree trunks are prominent in the foreground, with thick moss or Spanish moss hanging from the branches. The background shows a body of water reflecting the light. The overall mood is dark and mysterious.

A M E R I C A N FORESTS

FEBRUARY 1949

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AMERICAN FORESTS

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THE COVER

Lest we be considered guilty of a slight case of deception we hasten to state that this is *not* a photograph of Georgia's Okefenokee swamp—despite the story title in the lower right hand corner. This John Kabel study was made in the neighboring state of Florida, but with the typical Kabel touch it seemed to capture the full flavor of Charles Elliott's story. For actual Okefenokee swamp photographs, including some Cruikshank bird studies, turn to pages 4, 5, 6, 7, 8 and 9.

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LETTERS TO THE EDITOR

True Conservationists

My husband is an ex-G.I. and we are among many who are struggling to hold a tiny patch of earth against the grasping hands of creditors. After the war we didn't know where to live or what to do until we went to visit my husband's people in Maine. We found their house standing alone in front of a blackened forest. It had been cut and then the slash had caught fire and burned what was left of the forest.

In those blackened woods a dream was born. We knew what we wanted then and there. We had always loved that woods and to see it dead and reduced to ashes was more than we could bear. We moved to Maine as soon as we could and last year we were lucky enough to find a house of our own and an acre and a half of good land. There are very few trees here but that is part of our plan. We have planted twenty-five Norway spruce trees and they are all growing fine. This fall we put five Mugho pines on the lawn near the house for evergreen shrubbery. Next fall we hope to plant another twenty-five. Our dream is to buy up scrub land and plant it with trees.

I am an artist and trying to build up a sign-painting business here in Rockland to supplement our income. My husband is a carpenter and studying architecture.

Last fall my husband's people lost their house and again the woods burned—we have been to see the destruction the fire caused and find that the houses are all being rebuilt. We can't help wishing that each family would also help to rebuild the woodlands that were lost. We are trying in our small way to reforest the land.

Louis Emery

Rockland, Maine

Wanted—Suggestions on How to Live in Paradise

I have been a member of The American Forestry Association for a good many years and have enjoyed the magazine more than any other that I take. Among the many interesting articles, I remember several on wildlife recreational areas. It is partly because of these that my wife and I became interested in a local private wilderness area.

We live on the San Francisco peninsula, facing the bay. Just over the top of the watershed ridge, facing the Pacific Ocean (and its fog) are fairly extensive redwood forest areas—almost all second growth.

This year, sixty of us have purchased a tract of land of about 1,000 acres of canyon country, to be used as a joint recreational area, and have organized as a non-profit corporation in order to keep it as such.

It is a beautiful, wild spot. The original destruction has had eighty or ninety years in which to recover some of its primeval beauty. We propose to prohibit hunting and perhaps improve the fishing; to establish fire breaks and trails—few roads. Otherwise we expect only to enjoy the country. A few will build cabins.

There must have been others who have followed this same general procedure in similar areas. What can you tell us about the pitfalls that may be ahead of us? Can you give any suggestions as to how we may get the most enjoyment and benefit from our project?

Dr. H. W. Macomber

Burlingame, California

But How Do You Pronounce It?

"Twin Pines" is an old familiar sign in front of roadhouses, tourist camps and country hotels. So often the "pines" prove to be spruce, fir, or even arborvitae trees that the name has become a standing joke to



The twin white pines

anyone with a knowledge of botany. But the twin pines in the attached picture are native white pines, the lumber tree that proved so important in the early development of Maine.

These twin pines are not in Maine, however, but in Massachusetts. Their chief claim to fame is that they mark a woods road, formerly an old Indian trail, leading to Lake Chagoggagoggmanchauggagogg - Chaubunagungamaug (now called Webster Lake for short) which has the distinction of bearing the longest name of any lake in the world.

The name is of Indian origin and refers to the original Indian occupancy by two tribes, one on the North Lake and one on the South Lake of this tripartite body of water. By mutual agreement, after much peace-pipe smoking, a decision was reached: "You fish in the South Lake, we fish in the North Lake, and nobody fishes in the middle." So the lake got its name!

About thirty years ago, there was still a native Indian left in this area, one Paine Henry by name, who lived in the woods near the lake, subsisting on fish and blueberries and doing odd jobs for farmers. The photograph was taken in 1935. Some months later the twin pines were cut for lumber or boxwood and an examination of the stumps proved they were the same age—158 years. Certainly twins in age if not in size.

Stanley W. Bromley, Ph.D.,

*Bartlett Tree Research Laboratories
Stamford, Connecticut*

Pressure-Treated Wood

The question raised by C. E. Howell in the November issue is a good one. He asks why not make timber products now in use, as well as those being installed, last longer.

I agree with Mr. Howell that now when our forests seem to be making a comeback it is especially important that we do all we can to preserve products of wood, whether a shelf or a home.

The big hurdle in the way of greater utilization of such wood in the past seems to have been the lack of facilities for small-lot treatment of wood. Many an eager architect and builder has been frustrated by the non-availability of the treated wood which he has specified. One solution, on the technical side at least, may be the prefabricated pressure treatment recently announced by the Wood Treating Chemicals Company of St. Louis, Missouri.

O. L. Persechini

St. Louis, Missouri



It's Time To Talk About Trail Riding!

Sure it's winter . . . and the high, rugged, roadless back country of our western national forests and parks . . . Trail Riding country . . . lies deep in its blanket of snow. But what better time to talk about Trail Riding? . . . to tell you what is being planned this summer for the Trail Riders of the Wilderness under the sponsorship of The American Forestry Association? If you are an old hand at Trail Riding, the news that fourteen expeditions, including a pioneer trip, have been organized for 1949 is certain to excite you. If you have never experienced the thrill of "following the packs" with these organized expeditions into true wilderness country, of riding tree-lined trails, fishing fast white water, or exploring afoot these last strongholds of nature . . . let us tell you about it. Read the schedule of 1949 expeditions below . . . then write us for further information.

Great Smoky Mountains, North Carolina
June 14-25 and September 6-17

Quetico-Superior Wilderness, Minnesota
July 1-10 and July 12-21

Flathead-Sun River Wilderness, Montana
July 5-16 and July 16-27

Sawtooth Wilderness, Idaho
July 26 to August 5 and August 9-19

Maroon Bells-Snowmass Wilderness, Colorado
August 3-15 and August 18-30

Cascade Crest Wilderness, Washington
August 15-27 and August 29 to September 10

Pecos Wilderness, New Mexico
August 29 to September 11

High Sierra Wilderness, California
Late August (exact date to be announced)

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Eternal Swamp

Southeast Georgia's untamed Okefenokee cradles the legendary Suwanee River, resists man's attempts to alter its character

By CHARLES ELLIOTT



THE earth around us was bright with quickening life. There was new green on the cypress trees, and tupelo, bay and cassena were bejeweled with emerald sprays. The great swamp rode on the tidal crest of spring and through its length and breadth ran the subdued undercurrent of excitement which goes with the miracle of birth.

"Wood ibises," I said, pointing. Beyond the narrow lake two huge

birds with black-tipped wings lumbered across the sky. But Lem wasn't looking. He had dropped to one knee and was carefully picking leaves out of a depression in the muck. He studied the track for a long minute before he arose.

"T ain't him."

"T ain't who?" I asked.

"Th' bear I had a fight with," he said.

"For fun?" I suggested.

AMERICAN FORESTS



Dan hadn't had some fortypenny nails in his pocket. They got cross-ways in th' bear's mouth and kept him from clampin' down. He turned loose to git another hold. I didn't have nothin' but a pocket knife, and I got it out . . ."

Lem ripped out his six-inch switch blade and snapped it open to illustrate.

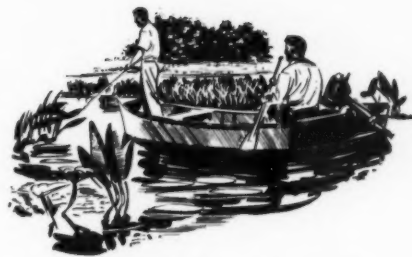
"I jumped on his back and began to stab him in th' ribs. He knocked me off in th' mud and got away."

"How would you know his track?" I asked, suspiciously.

"He left two toes in my trap," Lem said.

Knowing Lem's reputation as a purveyor of tall tales, I later checked his story and found it correct in the essential details. But what amazed me more than the story was that the character of the Okefenokee Swamp in southeast Georgia had changed so little in the past two centuries, in spite of all the ravages by man. It was still the same mysterious land which William Bartram had reported, filled to the brim with languid life and sudden death, with high drama one of its rules instead of a rarity.

There is something timeless and eternal about the Okefenokee Swamp. You have that feeling when you stand under the slim-bodied pines on Billie's Island, or pause in the big cypress



grove on Minnie Lake, and sense the ceaseless but unhurried tenor of life move around you.

Many of the men who made great changes, or proposed greater ones, are gone. Nature has covered the sores they left and hidden most of the scars. Here and there are remnants of elevated trestles where man drove logging railroads into the morass and brought out millions of feet of virgin cypress. The logging camps, once roaring with rough activity, have fallen into decay and settled once more to become a part of the earth's restless mould.

Nature has kindly blotted out the desecration with her trees and shrubs and other plants and in less than a quarter of a century reclaimed most of her own.

The Creator must have had in mind an eternal swamp when a few eons ago He shaped a vast mud cup by the action of archaic seas against

Lem Griffis, the author's guide and hero in this unconquered swamp, teaches one of his "touristers" the art of frying tasty hushpuppies and fish

"It was right over yonder," Lem said, ignoring my attempt at humor. "Here, I'll show you."

We stepped around the end of a slough and he pointed out the near tragedy, detail by graphic detail.

When the swamp bears leave the berry patches and rotten logs filled with insect grubs to steal honey and hogs belonging to the swamper, they become "rogues."

Lem and Dan, his partner, secured permission to exterminate one of these thieves which had been operating throughout the swamp. They set a trap for him on one of his regular runs.

Several mornings later they caught the bear. He was lying down, partially concealed, and they didn't see him in time. He lunged out of the brush, snarling, and tore loose from the trap. Dan was in front with the gun. He tried to use the weapon, but it was walloped out of his hand into the slough. Dan himself went down before the attack. He tried to roll out of the way, but the bear caught his leg in powerful jaws.

"He'd a bit it off," Lem said, "if







Photos by Allan D. Cruikshank, NAS

THE BIRD POPULATION of Okefenokee is multitudinous and varied. The trio of swamp songsters (upper left) are mocking birds. The poetic lines of the beauty shown above could only belong to the American egret. Lower left, a wood ibis and (be'ow) two blue-winged teals playing follow the leader





The Suwannee Canal serves as a water highroad for natives and "touristers" who enter the Swamp from the east. Fishing is excellent

the lurching sands and perched it half a hundred feet above the surrounding countryside. Out of this incredible beginning grew the earth's most expansive sunken garden.

Among the rare features of the swamp is its water. Vegetable dyes have stained it the color of ebony, but it is sweet and pure as a mountain brook. Islands, peopled with pines and oaks and laced with palmettos, are scattered bits of the topography. The lakes are elongated, winding mirrors, trimmed in emerald, kaleidoscoped with bright plumaged birds.

The swamp contains vast open tracts known as "prairies." From a distance, the prairie might be meadowland on any farm. It is really floating muck which supports the grasses and smaller vegetation, and an abundance of small animal life.

This floating land, from several inches to several feet in thickness, will

hold up the weight of a man if he moves continuously across it. If he stands in one spot long enough to break through the tangle of grass roots and mire, he will plunge out of sight into inky liquid. Walking across the prairie is like stepping on top of an inner spring bed and a single motion sets the earth to vibrating for many yards around. From this characteristic the swamp gets its name, Okefenokee, the red man's word for trembling earth.

The average visitor may travel hundreds of miles within the morass and see only a small part of it. Except for the canal on the Folkston side, the only highroads are narrow black water trails connecting the lakes and landings of the islands and mainland.

In the past there has been tremendous outside pressure to open trails to all portions of the swamp. Instead the existing trails have been

allowed to grow up, with the result that this vegetative dam holds back the flow and maintains a stable water level.

If it were not for the guides and the alligators, the prairies would eventually close up altogether. The black, deep holes are the homes of 'gators, which keep them clear of the marching lilies and grasses. Lem and his guides, usually in a hurry, tear through the swamp from one lake to another, grinding the aquatic vegetation out of the way.

The precision and skill with which Lem handles a motor is amazing to one without webs between his toes. He misses stumps by the breadth of a hair, tears through bonnet patches (the bonnet is a type of lily found in the swamp), and jumps sunken logs, sometimes throwing the boat almost completely out of the water.

Personally, I prefer Lem to leave his motor at home. A paddled boat does not provide the thrills, but it makes possible a deeper appreciation and more lasting impression of the Okefenokee. Without the noise, the winding trails become an adventure in solitude, in myriads of birds that drift through the trees, in acre after acre of wild orchids, in eight or ten foot alligators which appear suddenly in front of the boat and then vanish again into the somber depths.

"Yonder," said Lem, "is where the Suwannee River starts."

The swamp drains both east and south. The St. Mary's River washes out of its eastern side and flows serenely to the Atlantic Ocean. The Suwannee, immortalized in song by Stephen Foster, pours over its southern rim and follows a tortuous trail to the Gulf of Mexico, five hundred miles by its vagrant route.

Colossal-minded citizens have proposed to cut a canal between the Atlantic and the Gulf of Mexico. This proposal, along with other schemes to drain the swamp for agricultural purposes, build scenic highways through it and otherwise develop it commercially, died with the purchase of some half a million acres of lake area in the heart of the Okefenokee by the federal government for use as a migratory waterfowl refuge.

An interesting sidelight on this purchase is the fact that even under protection, the migratory ducks have failed to take advantage of their new winter home. Two resident species, the wood ducks and the blacks, are plentiful again, but the visiting waterfowl either stop in the Carolinas or

fly on over the swamp to the shallow fresh water flats of western Florida. Since both food and protection are served up bountifully, there is reason to believe that the migratory waterfowl population which was shot down to such pitiful remnants, may be years in recovering.

When the refuge went under federal protection in 1935, other wildlife in the region was at an all-time low. The great ivory-billed woodpecker had either been killed out or had moved on in front of the logging trains. Ornithologists say there is a possibility that the ivorybill still resides in the big gum slough on the south end of the swamp.

The alligators were slaughtered in tremendous numbers for their hides. This destruction was evident in piles of saurian bones scattered throughout the area. The heap of skeletons I saw on Billie's Island was higher than a man's head. A glimpse of an alligator, except in remote corners of the Okefenokee, was a rare occurrence.

None of the birds were spared by native gunners. The whooping crane, once so plentiful, disappeared. Even the Florida cranes, brothers to the Sandhill cranes which darkened primitive mid-western skies, were reduced to stragglers. The otters, minks and raccoons kept the fur houses in several local towns generously supplied with prime pelts.

On a two weeks' camping trip in the swamp in 1933, I found three brothers living in a drowned forest east of Big Water Lake. They had constructed a pole platform above the water level, erected a thatched palmetto roof over it and piled in heaps of Spanish moss for bedding. They existed chiefly on the wildlife, eating mudfish, terrapins, woodpeckers or any other creature they could kill or capture near their camp. They went outside only a few times a year to trade their hides and furs for gunshells, salt, corn squeezings and the other bare necessities of life.

These 365-day-a-year hunters living in and around the edge of the Okefenokee had killed the breeding stock of most large species down to such a low ebb that to bring them back absolute protection was essential. But fourteen years of constant vigilance and protection have paid dividends in the increase of all forms of swamp life.

On spring nights the earth resounds with the roars of big bull alligators. In the crotch of almost any tall cypress the masked face of a raccoon may be seen peering intently down

upon oblivious fishermen. Since the no-trapping regulation was put into effect, the raccoons have increased to a third of a million by the latest estimate. Otter trails crisscross the man-made runs. Bears are more plentiful than they have ever been in the memory of the old-timers around the refuge.

The too abundant bruin population has become a headache to the officials who administer the area, especially those bears living within the protection of the swamp and foraging outside on bee colonies and hogs of the natives. Recently a trapping program was inaugurated to move a part of the bear population to other portions of the South. This was done only after one local resident set out to destroy all the fur-coated blacks.

He was making good progress when two federal game wardens surprised him in the refuge with a gun. He ran and they sprinted after him. Finding himself trapped by a maze of sloughs, he swung suddenly and threw up his shotgun, loaded with buck shot. In cold blood he killed both wardens, left them in the edge of the swamp where they fell.

When the bodies of the two men were found, sharp-eyed FBI agents noted that the only natives absent from the scene of the crime were the hunter and his family. They went to question him.

"Yep," he said, without hesitation, "I done it. They war protectin' b'ars that et up all my pigs an' honey. I'd do it ag'in."

He readily returned with them and reconstructed the chain of incidents leading up to the murder.

"Th' bears," Lem agrees, "are git-tin' as thick as they were that time I helped th' tourister ketch a cub."

To Lem, all strangers are touriststers. They are his main source of bread and butter. It seems the cub gave this particular touristster such a severe scratching he was "durn glad of it" when the little fellow got away.

One of the most amazing facts about the Okefenokee is that fishing has been excellent throughout all its periods of desecration. While other wildlife species disappeared, the bass, bream, perch and pickerel have held their own. Some 20,000 fishermen and sightseers a year come from all over the nation to try their luck in the dark waters and to take away countless strings of fish.

It would seem that since otters, alligators and sharp-beaked birds had increased in such tremendous numbers they might be eating more fish than these waters can grow.

I was assured by the experts that these fish predators helped, rather than hurt, the fishing, since they consumed the slower, undesirable species,

(Turn to page 48)

The Billy's Lake area of Okefenokee has a sizeable otter colony. Nine were seen here the day this picture was taken

H. W. Hicks, Fish and Wildlife Service



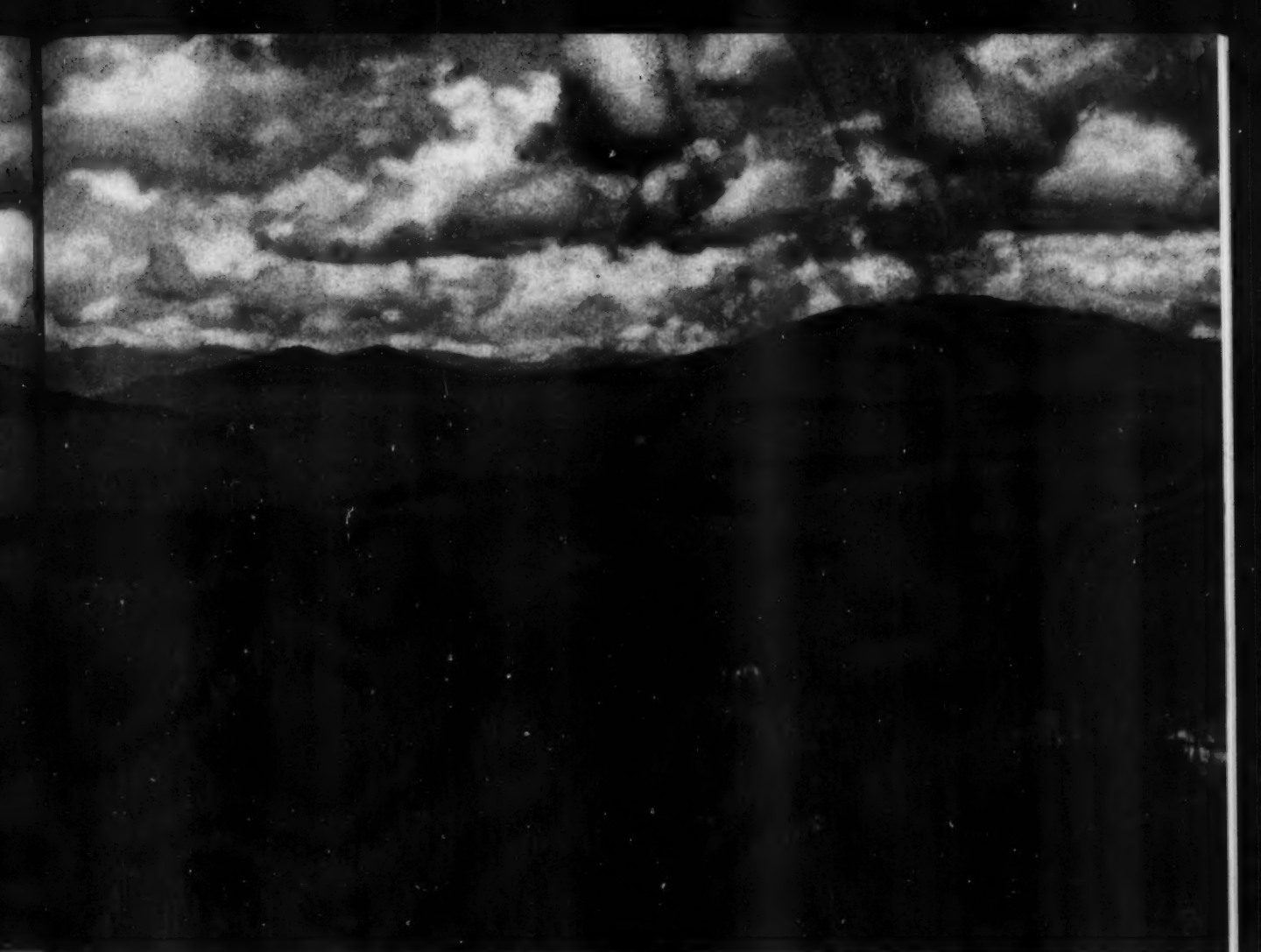


The Year Ahead —As I See It

By

A. C. SPURR

President, The American Forestry Association



USFS photo by K. D. Swan

THE honor of serving as the nineteenth president of The American Forestry Association comes to me as a great challenge.

Rich in history and accomplishments, this Association has since 1875 given voice, vision and organized leadership in stimulating a nationwide appreciation of the resources of our land. Guiding its policies have been many fine and outstanding citizens. An active, widespread membership has given force to its programs. With this combined effort and the will to get things done, the Association has erected many milestones along the road to better land use.

To me this record of accomplishment is a source of un-failing inspiration, as it must be to all conservationists. It is the well-spring of experience from which we can draw in moving forward to an even more productive future.

And that future is now before us, expressed in the Association's thirty-point Program for American Forestry. As I see it, our most challenging task in 1949 is to get the American people squarely behind this program.

In simple, forceful terms, we must make it clear to the people of the country that natural resource conservation is necessary to their continuing strength, security and happiness. We who are close to the situation know that forests, for example, are a basic natural resource; we know that they provide wood and many other materials for our needs, for the employment of labor and material in industry.

We know that forests protect our land resources from

erosion and deterioration; we know they regulate and conserve inland waters—water so vitally needed for irrigation, navigation, power, aquatic life, domestic use and pleasure.

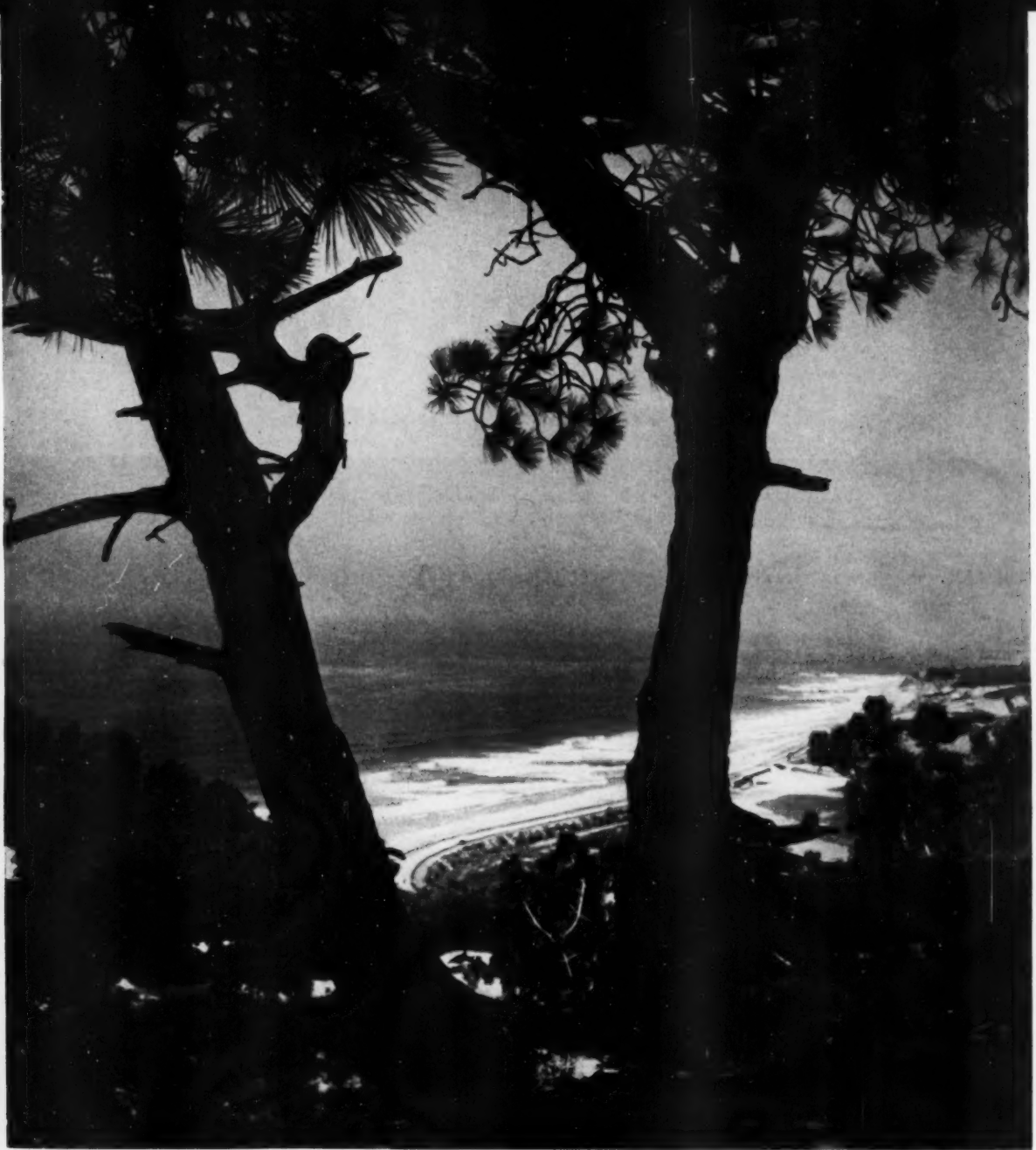
We know that forests provide forage for livestock, food and shelter for wildlife; we know how much they contribute to the health and spiritual well-being of our people.

The challenge then, as I see it, is to develop a national awareness of the vital role forests, soil, water, wildlife, outdoor recreation and related resources have in maintaining our standard of living—our cherished democratic way of life. We have made great progress to this end—but we have not as yet attained the position where we need no longer fear for our basic wealth—our land resources. To this achievement, and in the shortest possible time, the present program of the Association is dedicated.

This program, vigorously developed by retiring president William S. Rosecrans, the Board of Directors and the staff of the Association, should give new momentum to the conservation movement. It includes, among other things, greater co-ordination of efforts with those of other organizations; it calls for greater concentration of action at the grass-root level; and it provides for broadening the field and influence of AMERICAN FORESTS, a publication dedicated to the very purpose of stimulating thinking toward this end.

The challenge is great. But with the Association's expanding membership working closely with its officers, it is attainable. The year 1949 should see us well on our way.





Photos by Don Knight

TREES *by the Sea*



Unique tree guardians of the California coast against the vast Pacific. At left are Monterey Cypress jutting from the cliffs south of San Francisco, sole habitat of the species. Above are the equally exclusive Torrey Pines, found only on the mainland just north of San Diego and on Santa Rosa Island 100 miles at sea.



Beginning a report by a
United Nations observer
on forest conditions in
the turbulent Far East

U. S. Army Photo



Forests in Ferment

By M. A. HUBERMAN



“WHEN trouble's brewing, it's hard to keep your mind on your work.”

The idea that forests are in a ferment was voiced by foresters in practically every country I visited during a recent five-months' tour of the Orient and the Pacific. The words and accents differed, but the thought was the same.

I heard it in precise Oxford accent from Moslem foresters in Pakistan and from Hindu foresters in India. They were concerned because the partition of British India was causing the transfer of their colleagues in the former Indian Forest Service; there was also the question of whether the beautiful forests of the Kashmir would belong to Pakistan or to India.

Burmese foresters, eager to take up new responsibilities in their government's program of nationalization of the large private foreign-owned teak companies, were in a state of vigorous reorganization following the departure of all but four of their British fellow-foresters.

It was the same story in Siam and China, in French Indo-China, Malaya and Indonesia. Trouble of one kind or another was brewing. Active military operations in all of these countries except Siam make the situation especially difficult. In many places, I had to travel under military convoy.

My forester-guides were apologetic and ill at ease about this. But it was understandable. Adjusting to new governments, new policies and new leaders, with all of the uncertainties

involved, was not easy. It was this way in Japan when the Japanese did not know what the allied occupation powers expected of them. The Koreans had been in the same boat.

The Philippines were different. Here there was feverish activity in logging, sawmilling, reconstruction and trade. Yet the havoc wrought by the Japanese occupation and by the hard fighting early and late in the war, was worse than any I had seen in the East. Without question, part of the impetus stemmed from the historic date, July 4, 1946. On that day the Republic of the Philippines achieved its independence, according to plan, by grant from the United

States of America. Now in business for themselves, so to speak, the Filipinos were happily making the chips and sawdust fly.

Australia and New Zealand were still carrying on with the momentum of war-activated forest industries. Both private and government logging and milling were producing at the highest level permitted by manpower and housing shortages.

On United Nations business, my tour of forests, wood industries, forestry schools, research stations, timber markets and shipping ports of Asia and the Pacific, began at Karachi, Pakistan. To reach there I had flown from La Guardia Field through a



Upper left, Indians whip-saw large logs by hand into straight planks. Below, forests flank the Burma road

gray sky to England and Normandy, then over the Pyrenees into Spain and North Africa.

Tunisia, suprisingly, was green, but this changed quickly to brown, sandy stretches near Tripoli, and back to green near Cairo—that is, a ribbon of green in a waste of brown sand. And it was mostly sand below as the plane moved over the Negev in Palestine, Trans-Jordan, Saudi Arabia and Iraq. Indeed, there was little relief until we approached the palm-shaded, well watered city of Basra where the Tigris and Euphrates rivers come together. Later, as we passed over the most unbelievably eroded land on the north shore of the Persian Gulf, the Gulf of Oman and the Arabian Sea, I kept thinking about this Basra oasis.

What if the energy now being wasted in fighting in Palestine could be put to the constructive work of digging irrigation ditches instead of fox holes, planting trees instead of land mines? Perhaps water and a chance for a better livelihood would remove much of the basis for argument between the Jews and Arabs.

One of the things that impressed me most upon arrival in Karachi where, incidentally, I was welcomed by the inspector-general of forests, the only British forester remaining in the country after the partition, were the refugees from India. Despite a critical housing shortage, these weary people continued to move into the city and foresters as well as other government officials were busy setting up refugee camps. That it was no simple matter to find building material was obvious from the scarcity of trees in sight. Scrawny little shrub-like trees planted along streets and highways were surrounded by

mud walls to ward off omnivorous and roaming goats.

Firewood dealers kept their precious stock behind high fences while they split or chopped and weighed bundles on crude scales. Imagine buying a few ounces of wood to cook your supper! And not many can afford such a luxury item. Most people make their own fuel—make their own, that is, with cooperation from the cows and bullocks.

It is a fact of life in Pakistan, as in India, that animal dung, instead of being used as fertilizer, is hoarded and fashioned into flat cakes, dried in the hot sun, and burned to cook the daily handful of millet.

Erosion by wind and water is making much of the Sind and Punjab useless for cultivation—this in a country where the soil is the main means of livelihood. But the problem is far from hopeless, and foresters are anything but discouraged. They feel that the problems resulting from partition are only temporary.

Once the refugees are settled, once the transfer of Hindu and Moslem foresters slows down, once the government solves its primary organization tasks, it will supply foresters with funds and staff. They have plans, even actual demonstrations of sound soil conservation measures. They know how to make trees live under tough, dry conditions. If permitted, they could work out measures to control destructive goats, on which the miserable existence of so many villagers seems to depend.

There is hope among the Pakistani that the fabulous Kashmir with its magnificent spruce, fir, walnut and other valuable timbers will be assigned to their country once hostilities in that area have ceased. I was,

of course, to hear that hope also expressed on the Indian side.

But the Pakistani explained it this way. Pre-war timber production of the Kashmir was just about enough to meet the needs of Karachi, Lahore and other cities and villages of what is now Pakistan. Besides, logs and lumber from the Kashmir must move down the Indus River which flows practically its entire length through Pakistan. Although the timber in the wet zones of Bengal, east of Calcutta, is abundant, it is not within reach of the capital city of Karachi because of the great distance and because India's railway system is already overburdened. Water transport is prohibitive because of the scarcity of ships.

For these reasons, the successful pre-war work of establishing irrigated forest plantations should be expanded in order to meet the needs of villagers in Pakistan and in India, too, for that matter—for fuelwood and house posts. It should be clear that political partition and military operations in the Kashmir have put Pakistan forestry affairs in a temporary ferment. And as ferment continues, the population is growing and pressing on the limited fertile and cultivable land.

The situation in India differs little from that in Pakistan, except there are more people, more land, more forests. The *chir* pine forests on the Himalaya lower slopes are much like our longleaf pine; there is even the argument about the use of controlled or prescribed burning. There are the fast-growing *sal* forests and the famous Nilambhur teak plantations, whose growth rate has fired the imagination of foresters all over the

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Kashmir forests were mutilated in the struggle between Indian invaders and Azad Kashmir troops

Azad Kashmir Government



This Indian forester, a timber inspector for the government, passes on logs for a military sawmill

India Information Service





Japanese wood carriers are paid by the bundle

Japan's Fuelwood Problem

By EDWARD F. STEIGERWALDT

THE little old lady came struggling up the path and wearily dropped her packboard load of three bundles of firewood at the edge of the road. With hardly a glance at us, she piled the sticks neatly and trudged back down into the forest. Soon a group of teen-age boys and girls came out of the woods, each loaded down with a full packboard, and repeated the old lady's routine.

Close by a truck and several ox carts were loading firewood, working from the neat piles the old lady and teen-agers had built up. It would be hauled, we were informed, to the nearest Japanese village distribution station, where ration officials would take over.

But we were primarily interested in the wood carriers and in the source of the fuelwood they so patiently

packed on their backs for the homes and kitchens of Japan. So we followed them to where the cutters were operating in the thickest part of a red pine stand. We already had been informed by the Japanese forester who accompanied us of the importance of firewood to the people of that country—that twenty-five percent of Japan's forest area is dedicated to fuelwood production.

The cutters worked rapidly. Trees five to eight inches in diameter were felled with quick strokes of a small saw. The rule was very low stump—in most instances flush with the ground. After the tree was felled, all branches were chopped off with a light ax or heavy knife, and the trunk cut into firewood lengths of twelve inches. All pieces over five inches in diameter were split. Twisted straw

ropes were then used to tie the wood into bundles—bundles which the old lady and the youngsters packed to the road above.

This wood finds its way into the homes and kitchens of the Japanese people through normal fuel rationing channels. It is used primarily for cooking and as a substitute for charcoal to heat homes. Gas, oil, coal, or electricity for cooking or heating purposes is the exception rather than the rule in Japan.

Despite these efforts, however, fuelwood production in Japan is far below demand. As a result, there is a thriving black market.

Scavenging and scrounging for fuelwood has become an art with the people, and the "park-like" appearance of most forest areas near vil-

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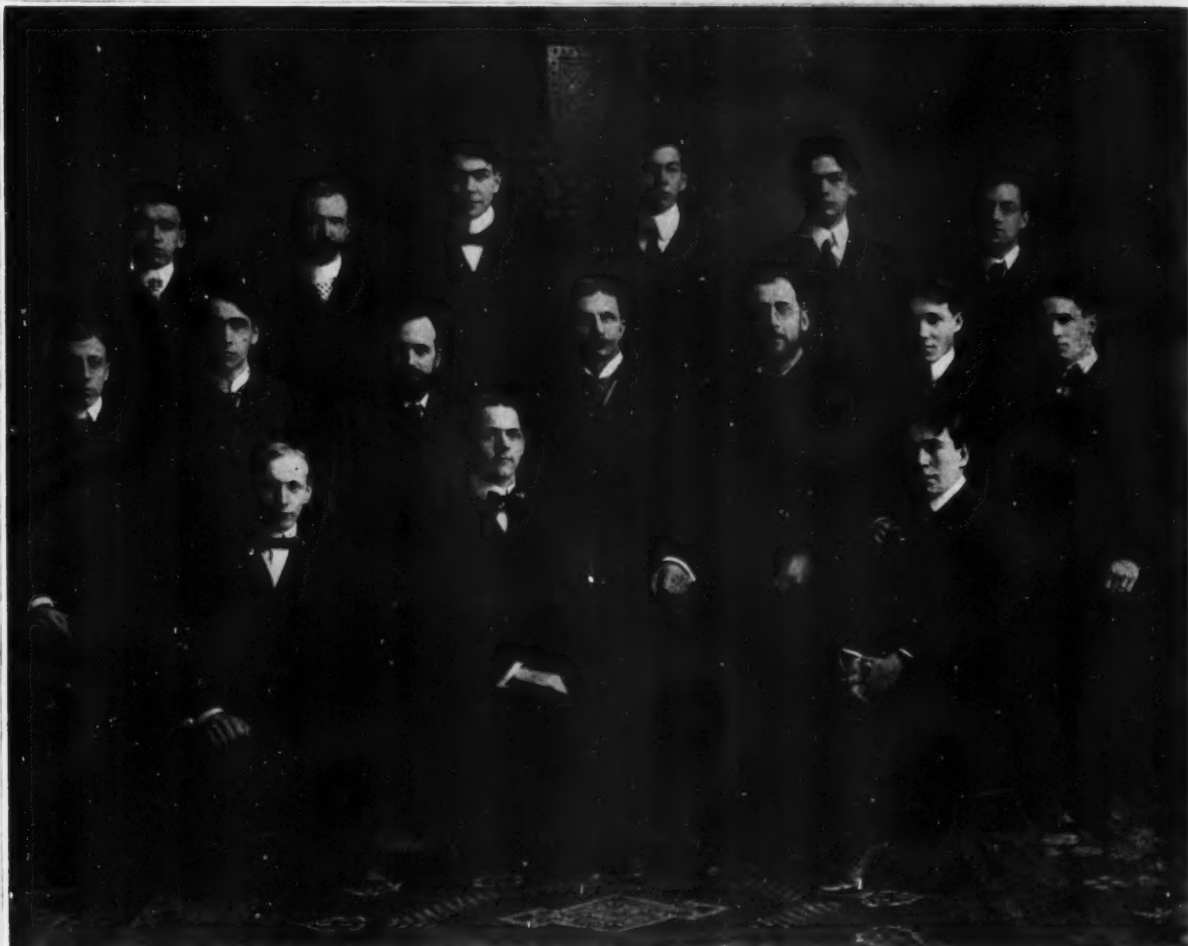
Close utilization of twigs and branches for firewood is characteristic of clear-cutting in Japan



Sticks of firewood are bundled with twisted straw rope for delivery to distribution centers in villages

Edward F. Steigerwaldt





The first forestry class in the nation was at Cornell. Dr. Fernow (center) was director

When Forestry Education Began

By HENRY S. GRAVES

Formal education in forestry began in this country fifty years ago—and no one is better qualified to review its beginnings than Henry S. Graves, dean emeritus of the Yale School of Forestry, and former chief forester of the United States. One of the world's most distinguished foresters and educators, he holds the Sir William Schlich Medal for outstanding service to his profession.—Editor.

The year 1898 marked the beginning of systematic education in forestry in the United States, through the establishment of the New York

State College of Forestry at Cornell University. At the same time, formal instruction in forestry was offered by Dr. C. A. Schenck at Biltmore, North Carolina, in connection with his work as forester for the Vanderbilt estate (see "Biltmore Days," in *American Forests* for October 1948). Numerous other schools of forestry were established in the next few years. In 1910 there were facilities for study of forestry at sixteen institutions, followed by others in succeeding years.

This extraordinary development of educational facilities for the study of

forestry can be explained only by consideration of events of the forestry movement during the previous two decades. Of special interest prior to the eighties were: first, the tree planting movement stimulated by the federal Timber Culture Act and legislation in nineteen states and territories to encourage the planting of trees; second, public shock resulting from destructive forest fires and, in some sections, by insect infestations; and third, scandals in administration of the public domain. On the constructive side were educational activities by agricultural colleges, especial-

ly in tree planting, and investigations by the U. S. Commissioner of Agriculture, the Smithsonian Institution and the Patent Office.

The broader aspects of silviculture, forest management and other features of forestry were given greater emphasis in the eighties. Many of the forestry leaders of that period had made special studies in Europe, some at forestry schools and others by excursions in forests that were under expert management. Among them were William H. Brewer, Charles S. Sargent, Franklin B. Hough, B. E. Fernow, John Muir, Joseph P. Rothrock and Nathaniel S. Shaler. In public land reform there were Carl Schurz and Edward A. Bowers.

Of special importance was the work of Dr. Fernow, a graduate of a Prussian forestry school, who came to this country in 1876 and soon took an active leadership in the forestry movement.

Of academic interest was the introduction of numerous bills in Congress during the eighties for land grants to various states to support schools of forestry. These proposals, which were largely political in purpose, received little support.

Gifford Pinchot entered the field of forestry in 1889, obtaining his basic training in France, with extensive field work also in Germany and Switzerland. Upon his return to this country he devoted his chief efforts to consulting work and to field studies in various regions of the country. In this work he employed a number of young college graduates, some of whom later studied in Europe. About that time Filibert Roth and John C. Gifford began their work in forestry, both of whom later took a conspicuous part in education in forestry.

Critical events of the nineties centered on the federal legislation in 1891, which authorized the establishment by presidential proclamation of forest reserves on the public domain. The act did not, however, make provision for the administration of the reserves. Various measures were proposed in Congress but failed of passage. The turning point was the action of the Secretary of the Interior on February 16, 1896, requesting the National Academy of Sciences to study the problems of the forest reserves and to make recommendations in regard to policy and needs for legislation. The Academy appointed a commission of distinguished men, with Charles S. Sargent as chairman, and Gifford Pinchot as secretary.

This nation's framework for forestry education was built in 1898. Its development is traced by one who helped guide it

During the summer of 1896 the commission made an extensive tour of the West to study the problems of the reserves at first hand. Two reports were made. The first recommended the establishment of thirteen new reserves aggregating in area about twenty-one million acres. The second, and full report, discussed conditions and problems on the proposed reserves and policies of administration.

One feature of the final report was the proposal that, as a temporary measure, forest officers be selected from graduates of the U. S. Military Academy, or from graduates of other scientific schools, the latter first passing a civil service examination. It was also recommended that not less than four graduates of West Point be sent abroad for instruction in forestry; and further that the Secretary of the Interior, on return of these officers should organize a school of forestry in or near one of the great forest reserves where officers of the Army could obtain instruction, and which would be open to civilians under such regulations as the Secretary of the Interior might prescribe.

This recommendation received little attention, but the expansion of the federal reserves and legislation that followed made it clear that a large number of foresters would be required for federal work alone, aside from needs of expansion of forestry in the states and on private land.

New York took the lead in forestry education, through the Act of March 26, 1898, providing for establishment of a forestry school at Cornell University and for the acquisition of a large tract of land in the Adirondacks for field work of students and for demonstration of forestry practices. Inefficiencies and scandals in the early management of the state preserves had led to the adoption, in 1894, of a constitutional amendment prohibiting cutting of timber on the preserves. Continuance of unsatisfactory management of the state lands and pressure by many interests to open the forests to cutting under principles of scientific management were responsible for the establishment of the school at Cornell University to train men competent to manage the state forest properties.

Dr. Fernow was appointed to or-

ganize and direct the newly established school. Filibert Roth, who had been his right hand man in the Division of Forestry at Washington, and John C. Gifford, already a prominent leader in forestry, were appointed members of the faculty. These three men carried the instruction in technical forestry subjects. The auxiliary courses in mathematics, physics, chemistry, zoology, botany, surveying, geology and political economy were taught by members of University departments representing these branches of study; and other assistants were appointed for management of the college forest.


The circumstances leading to the discontinuance of the school in 1903, through withholding appropriations by the state legislature, action that was deplored by foresters and other friends of forestry, will not be reviewed here. It should be emphasized, however, that the school had great influence in demonstration of the scope, character and standards of sound education in forestry.

In the spring of 1898, Dr. Schenck announced the course in forestry at Biltmore, covering a period of twelve months. The fields of instruction included silviculture, forest protection, management, utilization, finance, policy, history of forestry, and fish and game. Special attention was given to field work in forests under management; and there was provision for research. At a later date the period of study was increased by six months to provide for additional study in various regions of the country and in Germany. Graduates of the school were granted the degree of Bachelor of Forestry. It was a

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From Marsh Hall the author directed Yale's new forestry school in 1900





Vanishing Lands

Photos by Soil Conservation Service

Landowners of nine Missouri Valley states share costly toll of erosion. It's time to stop this needless waste of topsoil

By CHARLES CLEMENTS

EVERY hour of the day a forty-acre farm goes floating down the Missouri River!

Forty acres of soil, to a depth of seven inches, is a fair approximation of the average hourly burden of silt this hungry river carries along to the sea, day after day, year after year. It is a steady stream of waste for which the farmers and landowners of nine states pay dearly.

In the past two decades a number of suggestions and plans have been devised, aimed at controlling this ruthless river. Engineers have thrown dams across the channel here and there, have built diversionary dikes.

Soil conservationists and wildlife technicians have advocated more cover for the land, more permanent pasture, and an agriculture having its primary basis in grazing or other soil-holding practices. Foresters have cried out for more trees on the uplands, more effective fire control and more unified planning.

The task is challenging—and there is no surer sign of progress than the rapidly increasing number of soil conservation districts—from around 200 a few years ago to 400 at the end of 1948. Certainly the people of the Valley must have confidence in the work being done in these districts to

encourage such growth and expansion.

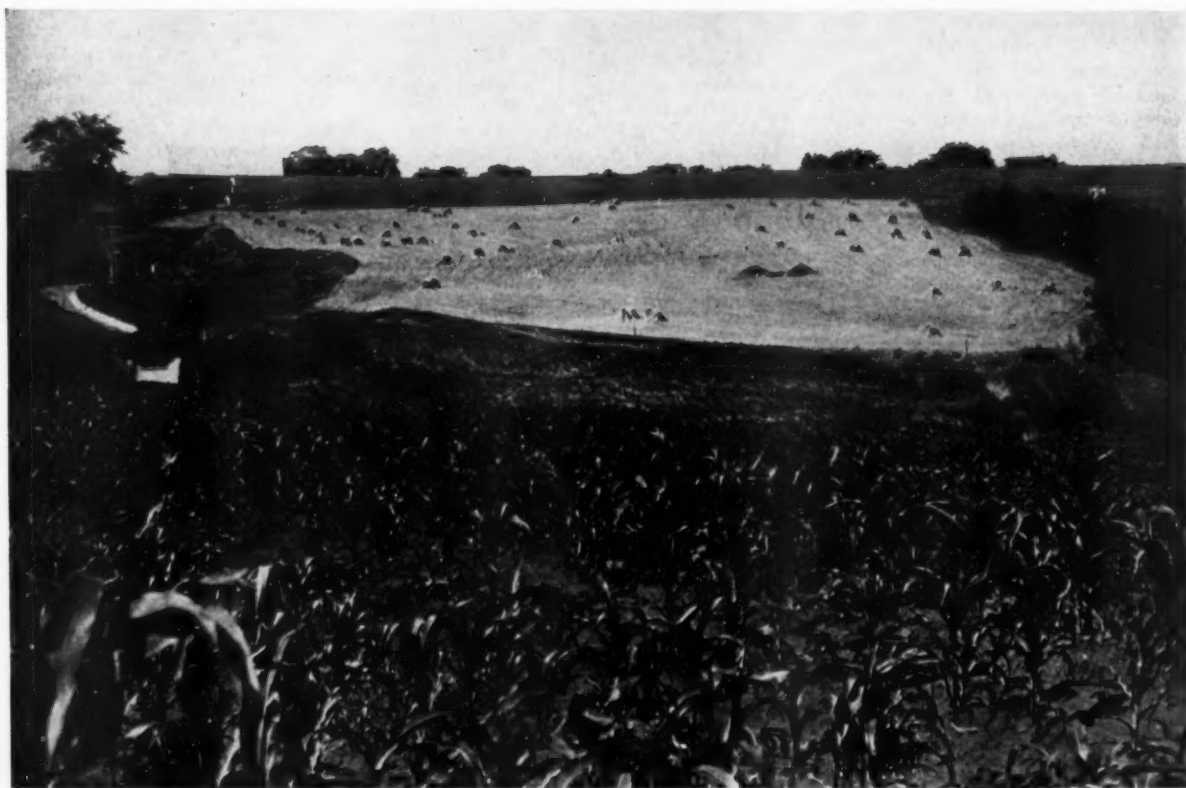
The approach developed is one of treating the land according to its needs and using it according to its capabilities. This involves land classification as to soil type, slope, erosion and past land use. From that point recommendations are made according to the needs uncovered in the survey or inventory. Sometimes contour plowing or terraces will solve the erosion problem, other times it may be best to convert a deeply gullied area into a pond; there may be need to practice stubble mulching on one piece of land or to strip-crop on another.

The photographs on these pages best illustrate the prevalent conditions in the Valley and the methods being employed to correct them. Land unabused by man has a tendency to cover itself with protective vegetation in defense against the ravages of flood and wind. If man hopes to extend his tenure of the land, he must act to give nature a hand, he must bind the wounds wrought by his own misuse of the soil.

Stubble treated with a one-way plow helps the land resist wind erosion

R. W. Hufnagle, S.C.S.





This is a "before and after" sequence on a farm near Bethany, Missouri, illustrating the correction methods used by soil conservation men. In the lower picture note how the gully at the right was stabilized by planting trees, how the center has been filled and revegetated, and how small dams corrected the gully on the left

By JOAN HARVEY



The article "A Prop for Propaganda," by Robson Black, which the author uses as a springboard for her amusing—and pointed—observations, appeared in the August, 1948, issue of AMERICAN FORESTS. In essence, it supports the principle that "selling" good forest management is best accomplished by emphasizing its high personal value—and that practical demonstration is the most effective way to convince landowners that the well-managed woodlot puts money in the bank.

In taking satirical issue with Mr. Black, Miss Harvey writes as a staunch conservationist with an irresistible sense of humor.—EDITOR.

There should be a place for the care and use of the woodlot in the program of every general farm. But where is it? As I read Robson Black's article (A Prop for Propaganda) in the August AMERICAN FORESTS, the suspicion grew on me that conservationists are perhaps not conversant with the causes of farmer sales resistance to woodlot propaganda.

On my farm in eastern Pennsylvania I am completely surrounded by tall trees and high lumber prices. We have sixty-seven acres of woodland. The chestnuts are gone, but there are thousands of feet of original oak, walnut, cherry, maple and poplar, along with some white pine and black locust

my father set out nearly fifty years ago.

As a dairy farmer, I fought these trees and their precocious offspring for eleven years, but in 1945 I decided to modernize my viewpoint and cooperate with our trees. They were winning anyway. I watched my neighbor subsoiling the dense white clay which underlies the tilth in this locality, and I thought how fortunate I was to be able to let my tree roots accomplish this laborious and expensive task.

Then I read an article on hybridizing forest trees which somewhat disturbed my complacency. I began

to worry about our trees being not quite normal. In just a few years they had made such tremendous gains in small patches of my still plowable land that I thought possibly they had been crossed with poison ivy. I sought the advice of an expert, eventually contacting a farm forester.

The farm forester was both interesting and encouraging. He quite fired me to share his enthusiasm for the myriad of pine seedlings which had taken root all over the place. He advised me to kill off the overshadowing hardwoods by nicking the trunks and applying a certain weed killer.

It was then November and farm work was slack, so I nicked and killed trees assiduously for a week before it occurred to me that they were then dormant and that the weed killer probably would not work. It didn't. I tried again in the spring when it was too wet for farm work. I nicked trees and anointed them with weed killer—and the rain washed them clean again. By the time I was rescued by the pressure of delayed farm work I was convinced that God and I were working at cross purposes. He apparently wanted those trees to grow and multiply.

The farm forester had also made a rough estimate of my stand of timber. He gave me the name of a new lumberman whom I wrote at once. I am still awaiting a reply. I had long since wearied the local planing mill with my Fuller brush man efforts to sell trees. In 1939, we cut down a



few trees and hauled the logs down to this mill to be sawed into lumber at the firm's convenience. The last of those boards were delivered in 1946—seven years later!

This mill has all the necessary facilities, yet it imports all the wood it now uses or sells. The yard foreman told me airily: "No, we won't go back to lumbering out trees until there's a depression or something and labor is cheaper."

"But isn't it pretty expensive to import lumber?" I asked.

"It doesn't matter. We can sell it," was the grunted reply.

I do not give up easily. Recently I noticed somebody was logging out oak trees just off the highway above our farm. I stalked the man for a couple of days and finally got him to come look at our woods. I carried him gently down to the heart of our timber stand in our tame jeep. Unfortunately, a sort of cloudburst came up—or rather down—before we started back. The man has never returned, but from his appreciative comments I suspect he went promptly to the nearest agency and bought—a jeep.



I am now convinced that a normal lumberman likes a scarcity of lumber. He will handle the fewest possible logs at the highest prices, and if confronted with a really formidable stand of timber will turn pale and flee. Experiences like these are enough to immunize any farmer against farm woodlot propaganda. He will be deaf to schemes for the care and culture of woodlots until he has a market for his product. Any farmer will need a week composed of eight thirty-six-hour days to apply these proper forestry methods.

The farmer is a busy character. As a matter of fact, he works four times as long as the plumber or mechanic to earn a dollar. He rarely has more than one-fourth as much money to invest or a fourth of the leisure. If he stops to kill trees when his corn

needs cultivating, his cattle will go hungry come winter. Nor does he

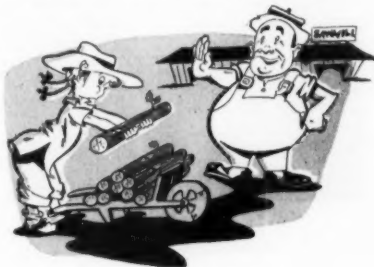


find it worthwhile to compete against cheap mill labor and log out his own trees. Furthermore, each of his saleable trees took fifty years to grow, while the mill can turn them into door frames in a week.

Of course, the farmer can always burn his trees and keep warm. You are very right. He can. We cut wood for our heater one winter back in the depression. We worked outdoors for eight hours a day. The wood we cut kept us warm in the house for another eight hours—the remaining eight hours we slept like logs. Each hour we spent thus saved us exactly five cents off the coal bill, but I don't remember being cold for a minute.

Here is what can happen when a farmer is determined to capitalize on his woodlot. Last winter I decided to remodel the inside of our house and knew I would need inside trim. I cut down a white pine and showed it to our truck. The truck fainted. Therefore, I promoted a beautiful friendship with a certain man who was planning to build a house and who has a nice big truck with a winch.

I waited months and months for him to finish the outside of his house and get around to needing inside trim. He showed up in August very complacent because he had just got his roof on. The hot afternoon was plainly making up for three days of rain. I had read my weather map, so I was getting in two acres of clean clover hay. I had the equivalent of a \$50 bill scattered around the back field, so I let my amateur logger drive on down to the woods by himself.



He was back in an hour with the thought that my larger tractor might better handle those logs. I had a counter proposal. No one expects a farmer to desert a half made hay load in the field, so he helped pitch hay as we kept an eye on the weather.

Suddenly I saw strange cows emerging from the woodlot into my small but precious corn field. I quit haying so fast that my victimized colleague failed to see what happened and dazedly finished collecting the hay all by himself. After all, his truck had disturbed the nervous systems of my neighbor's cows which had sought out our thicket as a sanctuary from the flies. Thirteen young maiden cows had erupted in all directions, so that three days later we found several in a village four miles away.

After that the countryside relaxed and turned in for a night's sleep. I needed that, too, so it was three days later before we snaked the logs out of the woods. It took us only an hour or so once we got at it.

Possibly August is the wrong month for logging operations. The other time it was January. I remem-



ber watching my loaded truck sink to the hubs in the forest loam which had seemed hard frozen as the empty truck skimmed over it. That was the day I bought the big tractor. All the major improvements on this farm are directly traceable to that troublesome woodlot—the big tractor, the jeep, the oil-burning heater. Even the tractor power take-off with which I can, by taking time by the forelock, cut all the trees a farmer has time and strength to handle.

However, I am not a complete Philistine. Even if I can't at this time utilize my trees, I know that they are kneading my shallow farm soil into fertility with their searching roots. I believe, too, that times change and that forestry propaganda will create a better market for timber.

So I hope AMERICAN FORESTS will continue to spread propaganda for farm woodlots, because any time a market develops I have in my woods the proper goose that will lay a golden egg.



A. C. SPURR
President



JOHN M. CHRISTIE
Treasurer



KENT LEAVITT
New Director

New AFA Officers

A. C. Spurr, of Fairmont, West Virginia, has been elected president and John M. Christie, of Washington, D. C., treasurer of The American Forestry Association, both for one year terms. Mr. Spurr, president of the Monongahela Power Company, succeeds W. S. Rosecrans, of Los Angeles, California. Mr. Christie, assistant vice-president of Riggs National Bank, succeeds I. J. Roberts. All officers were elected by letter ballot of the AFA membership.

Re-elected to the Board of Direc-

tors for three-year terms were William B. Greeley of Seattle, Washington, vice-president of the West Coast Lumbermen's Association; Lloyd E. Partain of Philadelphia, Pennsylvania, manager of the commercial research division, Curtis Publishing Company; and Walter H. Meyer, New Haven, Connecticut, Harriman Professor of forest management at the Yale School of Forestry.

New Board members elected are Theodore S. Repplier of Washington, (Turn to page 44)



THEODORE S. REPPLIER
New Director



WILLIAM B. GREELEY
Re-elected Director



WALTER H. MEYER
Re-elected Director



LLOYD E. PARTAIN
Re-elected Director

Peace, Plenty and Freedom

President Truman's inaugural day pledge of "peace, plenty and freedom" to the peoples of the world may mean a decisive period in land use history is at hand. Political ideologies may in large measure be cast by statesmanship, but whether people eat, find shelter and enjoy other necessities of life rests upon the capacity of the good earth to provide the required raw materials.

The race between population and food—with population forging ahead—has been plainly visible on the world horizon for some time. To a less critical degree, the same can be said of all natural resources (see *A World Forest Policy* in the January issue). Just what the President has in mind in the way of definite planning to achieve a more promising population-resource balance may be revealed soon. Our "imponderable resources of technical knowledge" which he would share for the benefit of less fortunate peoples, will be of little help unless translated into the right kind of action programs. This means widespread application of bold measures to check destructive land use—to restore sick and depleted lands to full productivity. It means, in essence, the end of timid, vacillating, halfway conservation efforts.

It is expected the President will channel his moves through the Food and Agriculture Organization and other agencies of the United Nations. However, since a harrassed human race is certain to need assurance of this nation's willingness and ability to support the President's proposals, an initial show of faith might well come from Mr. Truman's own administration and from the 81st Congress pledged to support the Truman policies.

Confusing and conflicting government conservation policies need to be rectified; something must be done about waste in the taxpayer's conservation dollar, running as high as ninety percent in some estimates; more realistic educational aids to landowners is a critical need.

Congress should appraise conservation legislation and appropriations with the same realism displayed in other phases of world recovery—and social reforms. There is little to commend action that ignores adequate protection and development of resources at home while allocating billions of dollars to rehabilitate depleted lands half way around the world.

Given tangible evidence of support, the Truman plan may well prove the "turning point in the long history of the human race."

A Lesson from Thoreau

A little over a century ago, Henry David Thoreau rebelled at the growing complexity of life in his time and refused point blank to go along with what he termed the lives of "quiet desperation" led by most men. Accordingly, he retired to Walden Pond where he built a cabin at a cost of exactly \$26.12.

To contemplate what that cabin would cost on today's inflated market serves only to raise our blood pressure. What interests us most is whether it is necessary to retire to a pond to enjoy the pond. This was Thoreau's philosophy, although as Joseph Wood Krutch points out in his recent book, *Henry David Thoreau*, the Walden naturalist did not seek out the primitive wilderness, as is popularly accepted, for his meditations. His cabin, as his Aunt Prudence remarked, was "in view of the public road"—and a village was within easy walking distance.

Actually, few people are qualified by temperament in this atomic age to retire to a pond—to any stronghold of nature. The human urge is for movement—to get around. But any one can enjoy a pond, can open a door to some new and intriguing mystery of nature. All that is needed is a responsive mind and a brief moment of close-up contemplation. This, to us, is the greatest lesson Thoreau teaches.

Even New Yorkers do not have to go very far to find a field or a wooded grove. Yet many never do. Thoreau might have been thinking of this when, as Author Krutch brings out, he solicitously urged a city-bound friend bemoaning the state of his health not to worry because "you may be dead already." There's an element of truth in this. Certainly people who have never learned to enjoy the blessings of an occasional moment with nature cannot be said to be living in the full sense of the word.

Mississippi Shows the Way

Conservationists owe an accolade to far-sighted officials of Mississippi State College. The educators, aware that the bulk of their state's commercially valuable forest lands lie in widely scattered farm woodlots, have created a new agricultural forestry curriculum designed to equip graduates to provide management assistance where it will do the most good—among the small timberland owners.

This important step is advocated in The American Forestry Association's thirty-point program for American forestry.

The new course, first of its kind in the nation, is tailored for farm boys who plan to manage their own lands, become farm managers or enter soil conservation and agricultural extension work. Graduates receive bachelor of science degrees in agriculture with a major in agricultural forestry. This should not be confused with a professional degree in forestry, as it is not intended as such.

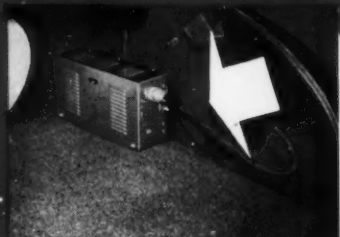
Other progressive colleges in the nation would do well to weigh the merits of this development. For one thing, the woodlot management problem is too widespread to be tackled adequately by the comparative handful of farm foresters now available. But more to the point, proper woodland management knowledge is as essential to the majority of farmers as a knowledge of soils and animal and poultry husbandry. One has only to realize that fifty-seven percent of the commercial forest land in the country is in small ownerships, mostly farm woodlands, to understand the importance of this.

It's Here...

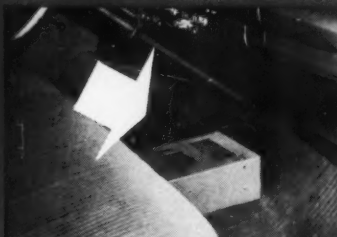


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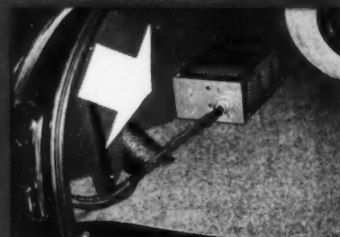
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—on the side



—on the bottom, right side



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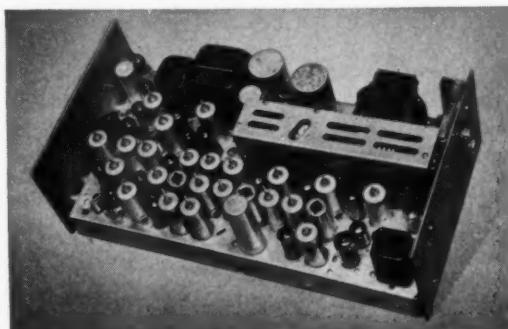
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KNOWING YOUR TREES

OVERCUP OAK

Quercus lyrata, Walter

By WARREN D. BRUSH

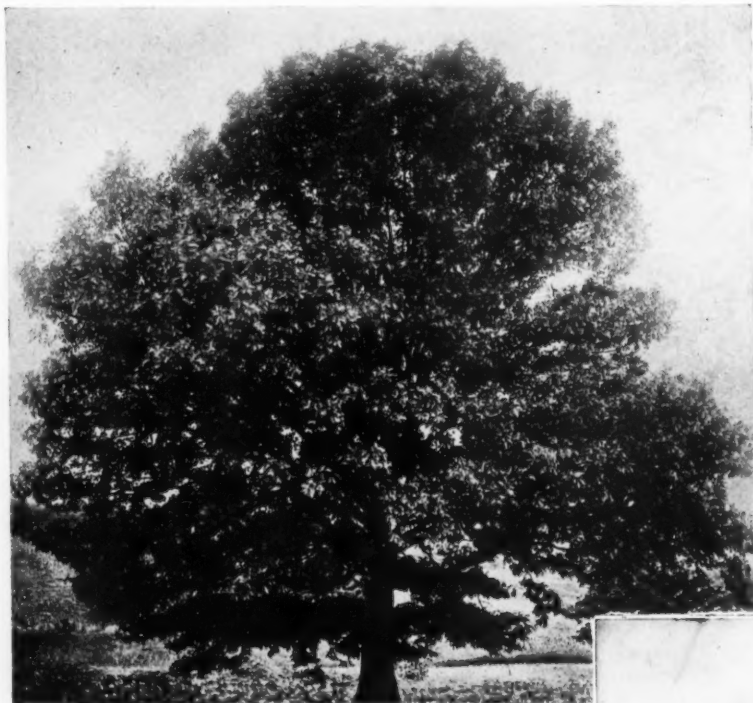
OVERCUP OAK is a tree of river swamps and low, moist bottomlands in the Atlantic and Gulf coastal plains and Mississippi River Valley. Its range is from New Jersey and Maryland southward to western Florida, and west through the Gulf region to Texas; and in the Mississippi Valley from southern Indiana and Illinois, south through southeastern Missouri and western Kentucky and Tennessee.

In the lower Mississippi and the low valleys of its tributaries, it is one of the most common trees in swamps

to two and a half feet, overcup oak occasionally grows to a height of 100 feet with a diameter of from three to four feet. A tree of many forms, it more nearly resembles bur oak than any other associated species, because of its deeply cupped acorn and somewhat similar leaves. The trunk is often tall and erect with stout, horizontal lower branches forming a wide and irregular crown. It frequently divides 15 or 20 feet above the ground into several principal branches or main stems which are wide-spreading and form a handsome, symmetrical, round-topped head. The branches may be pendulous and sweep the ground with their extremities. Frequently, the trunk forks at narrow angles and the branches spread gradually, forming an oblong head. Or the tree may be of poor form, with a short crooked or twisting trunk and a large open crown featured by crooked branches with relatively few smaller branchlets.

At first, the slender twigs are hairy and green, more or less tinged with red, but become smooth and orange or gray-brown during their first winter, and ultimately pale gray or light brown. The winter buds are egg-shaped, blunt, about one-eighth of an inch long, with light brown scales covered with loose, fine, pale hairs, especially near their margins.

The leaves are oblong, gradually narrowed and wedge-shaped at the base, and divided into five to nine lobes separated by broad, irregular sinuses. The terminal lobe is



Chicago Natural History Museum

Overcup Oak, one of the most common trees in swamps and deep depressions, is seldom more than seventy feet high

and deep depressions that are usually wet throughout the year. Because it is so prevalent in such locations, it is often called swamp white oak, water white oak, swamp overcup oak and swamp post oak.

It does not occur as extensive forests or in pure stands, but as isolated trees or in small groups with other hardwoods. A comparatively rare tree in the Atlantic and eastern Gulf states, it is most common and reaches its largest size in the valley of the Red River in Louisiana, and the adjacent parts of Texas and Arkansas. Overcup oak is better adapted to withstand frequent and prolonged inundation than many of its associates, including water, willow and laurel oak, water tupelo, water hickory, green ash and swampbay.

Although usually a medium-sized tree with an average height of seventy feet and a diameter of one and a half



Chicago Natural History Museum

The trunk may be tall and erect with stout, horizontal branches — or short and divided into several main stems

usually broad, sharp at the apex, and furnished with two small, nearly triangular lateral lobes. The upper lateral lobes are broad and much longer than the acute or rounded lower lobes. Smooth, shining and dark green above, silvery white and light green below and thickly coated with pale hairs, they are from six to ten inches long and one to four inches wide. The leaf stalk, from one-third to one inch long, is stout and grooved.

When the leaves are unfolding the male or staminate flowers appear in long, slender, hairy catkins from four to six inches long. The pistillate flowers, which are hairy throughout, develop into stalkless or slender hairy-stalked acorns.

The acorns of overcup oak are different from those of any other native oak in that they are enclosed for two-thirds or more of their length in a cup, the margin of which is unfringed. They occur singly or in pairs, are spherical to egg-shaped, light chestnut brown and about an inch long. Bright reddish brown and hairy on the inside, the deep, thin cup is covered on the outside with thick scales at the base which gradually become thinner toward the margin.

The bark is somewhat similar to that of white oak (*Quercus alba*), but is more of a brownish gray. Three-fourths to one inch thick, it sheds in large, thick, irregular plates, the surface of which is covered with thin scales.

The wood is heavy, hard, stiff and strong and moderately durable. It is inclined to check and warp during seasoning. The heartwood is brown with thin, lighter colored sapwood. It is used for the same purposes as white oak, and especially for railroad ties. Although many trees will not yield large, straight clear logs that can be manufactured into lumber, the supply of suitable trees is sufficient to make overcup oak one of the most important white oaks. The stand is estimated at about 4,000,000,000 board feet, which is about eight percent of the total quantity of all the white oaks. Its region of greatest importance includes northwestern Louisiana, southwestern Arkansas and extreme eastern Texas. Much of the timber is of poor quality but, because it is abundant over large areas, it is of some importance as a potential source of future timber supplies.

The tree bears seed abundantly every three or four years, but seedlings are infrequent and the young trees are often destroyed by browsing cattle. Like most specimens of the white oak group, overcup oak is a slow grower and large trees are often 300 to 400 years old. It is very susceptible to attacks by insects. Occasionally cultivated in the northeastern states, it is hardy as far north as eastern Massachusetts.

The name "overcup" refers to the button-like acorn and *lyrata* to the fancied resemblance of the leaf outline to the lyre. It is known also as forked-leaf white oak among lumbermen in several of the southern states.

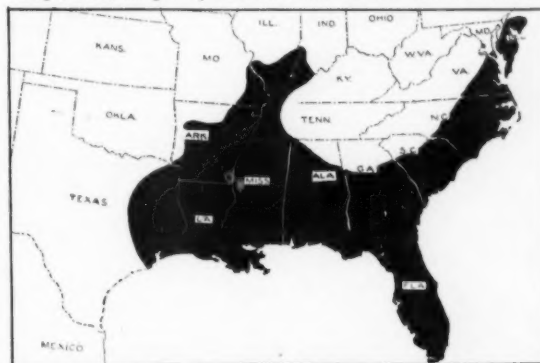


Alabama Division of Forestry

Acorns, enclosed in cups two-thirds or more of their length, are distinctive. Narrow leaves are dark green



The brownish gray bark, three-fourths to an inch thick, sheds in large, thick, irregular plates which are covered with thin scales



The natural range of the Overcup Oak

Sideline Forestry

Owners of Wisconsin resorts, cranberry marshes and fur farms put their idle lands to work growing timber — and it pays

By CHARLES H. STODDARD

Scattered throughout Wisconsin—and in many other parts of the country as well—are a growing assortment of summer resort proprietors, operators of cranberry marshes, fur farms and even coal mines, who are turning to forestry as a profitable sideline. In the case of the Wisconsin people, one might say they have been “badgered” into it.

Those acquiring lands for such businesses usually find a sizeable area of forest goes with the bargain. In the course of running their various enterprises, many have come to realize they have a considerable forest problem on their hands.

Take Bob Fischer who runs a fox ranch in the jack pine country of northwestern Wisconsin. He owns 240 acres, only six or seven of which are needed for his fox pens and residence. Prices on furs weren't too high in the mid-thirties, so Bob looked around for other sources of income. One day a visiting timber

buyer gave him an idea. The buyer's lump sum stumpage offer seemed rather low, and Bob figured he could do pretty well if he cut his own pulpwood logs and marketed them himself.

It was a wise move. In the fourteen years he has owned the place, Bob has cut and marketed about 200 cords of jack pine pulpwood which have brought him roughly a \$2000 income. By this combination of multiple land-use enterprises, Bob has been able to maintain a good standard of living. His forest income makes the difference between a fair living and a good one.

Then there's the Badger Cranberry Marsh near Shell Lake. Owner Charlie Lewis has 400 acres of timberland in a highly productive condition. Lewis majored in forestry at the University of Minnesota before he got into the cranberry business, so growing timber on the highlands around his bogs was as natural for

him as a duck taking to water.

Each winter before and after the marshes are “sanded” there is a slack time for the crew. The woods offer a means of steady employment and at the same time supply the lumber needed for crates, frames, gates and drying sheds.

In 1933 Lewis took out 30,000 feet of pine logs over ten inches in diameter, and again in 1936 took 40,000 feet. In the intervening years smaller amounts were removed to supply maintenance materials. Last winter about 50,000 feet were logged on the same lands which yielded 70,000 slightly more than a decade ago. And the ground is covered with excellent white and red pine reproduction.

Not all the highlands around the cranberry marsh are in high-grade forest cover, so before the war the Lewis family began planting about 10,000 trees each year. Now “stepping-stone” plantations greet the eye around the edges of the eighty-acre marsh and 100-acre lake. Recently, release and improvement cuttings removed overtopping birch and aspen (which are burned as fuel) and the growth response has been remarkable, according to young Chuck Lewis who is now taking over active management of the marsh.

Up at Minong, Dr. M. A. Hirshberg, who operates Camp Horseshoe for boys, recently began to practice forestry on his 600-acre tract. Most of the lumber for his buildings comes from the large overmature jack pines on his lands. Only the best trees were cut, and in the openings seedlings have become so well established that the remaining trees are being removed for pulpwood. Nearly 150 cords were cut during the winter of 1947-1948, bringing him more than \$400 for stumpage alone.

A management plan has been prepared by a consulting forester as a guide for future operations. And under way is a tree planting operation.
(Turn to page 44)

Second growth white pine logs like these decked up in the Badger Cranberry Marsh forest bring a neat bit of extra income for the owner, Charlie Lewis.



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University of Florida's demonstration forest is perpetual reminder of a great forestry pioneer

viction that it was as essential to a school of forestry as machine shops are to a school of mechanical engineering.

A donation of 1,519 acres from the then Florida Board of Forestry got the ball rolling in 1936. The other 561 acres were purchased a short time later. The tract is typical flat woods type, four-fifths of which is in pine. The other fifth consists of cypress ponds, creek bottom hardwood, scrub oak, the memorial, roads, fire breaks and a small lake.

Development of the tract has progressed rapidly. It has all been fenced, graded roads have been built, and five summer camp buildings, plus a house for the superintendent, have been added. Adequate fire lines have also been a mandatory part of the scheme. There are even a sawmill and small nursery with water system for instruction purposes.

And considerable progress has been made in developing research and experimental plots. Slash pine planting experiments are being carried out on a sixty-eight-acre scrub

(Turn to page 40)

By E. A. ZIEGLER

Dr. Austin Cary, pioneer forester, departed this life in 1936, but his forty-four years of devotion to forest conservation are perpetuated in a 2,080-acre demonstration and experimental forest which bears his name at the University of Florida's School of Forestry.

Austin Cary, often called a circuit rider for forestry, would be pleased with this living memorial, for here his theories of research and education, of planting and correct cutting practices, are being resolved to action in the slash pine belt which he loved so well. True, his field activities were first devoted to his native woods of Maine, but in later years he concentrated upon the piney woods of the South, which was to him the forester's land of promise.

The Society of American Foresters and Dr. Cary's friends in the southeastern forest industries have made certain he will not be forgotten. At the forest's main entrance they put up a sign reading "Austin Cary Memorial," they planted seventy-one memorial slash pine (one for each year of his life), and they erected a Maine granite boulder inset with a fittingly inscribed bronze tablet.

The aptness of such tribute becomes apparent, indeed, when one attempts to enumerate the contributions Austin Cary made to his profession. Among foresters, his *Manual for Northern Woodsmen* was a best seller. His technical papers and other publications were prolific. He was a teacher of forestry at Yale and Harvard, three times a visitor and student of forestry in Europe, and industrial forester, state forester and for the last quarter century of his

life was logging engineer for the U. S. Forest Service. He was also a forest landowner.

Ever mindful of the heritage implied in "Austin Cary Memorial," the University of Florida School of Forestry is constantly striving to make its demonstration forest a model. The forest was established upon the con-

The shores of the forest lake make a peaceful setting for a memorial tablet to those University of Florida forestry students killed during World War II



Preview of the Hoover Report

Although the Commission on the Organization of the Executive Branch of Government, headed by former President Hoover, has extended the date on which it will submit its report to Congress from January 13 to sometime in March, Washington observers are currently making these predictions of interest to conservationists:

Reorganization of both the Department of Agriculture and the Department of the Interior will be recommended in order to consolidate conservation programs, eliminate conflicting, confusing and duplicating activities and reduce expenditures.

The committee will recommend that land activities of the Department of the Interior, chiefly the public domain and California and Oregon re-vested lands, be transferred to the Department of Agriculture; that water development activities be transferred to a new conservation department.

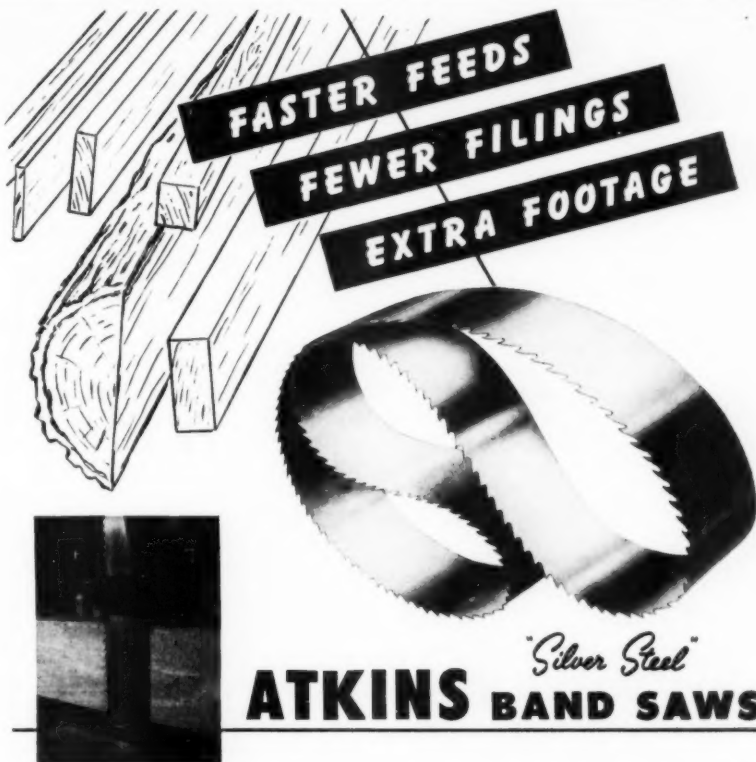
The reorganized Department of Agriculture would be grouped into eight major units, with two assistant secretaries added. Included in this grouping would be an agricultural resources conservation service which would be under a director reporting to an assistant secretary. Research, with the extension service, would also be under a director. Regulatory and agricultural credit services would be under directors but not reporting to an assistant secretary.

Recommended also will be an overhauling of the department at state, county and farmer levels, with the establishment of single state and county federal councils to replace duplicating agencies.

In the matter of conservation payments, the committee will recommend that payments be restricted to farmers who adopt complete and balanced conservation programs, with cessation of payments when the programs are completed. Furthermore, observers say, the committee will emphasize that payments should not be used as income supplements in disguise.

It will recommend that new federal agricultural research stations be established only where existing federal-state facilities cannot be developed.

A proposal will be made that the department should be required to report to the President and to Congress all irrigation and reclamation projects to determine their timeliness before any expenditure is made.



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WASHINGTON LOOKOUT

By A. G. HALL

Our growing population and the expansion of our economy depend upon the wise management of our land, water, forest and mineral wealth. In our present dynamic economy, the task of conservation is not to lock up our resources but to develop and improve them. Failure, today, to make the investments which are necessary to support our progress in the future would be false economy. We must push forward with the development of our rivers for power, irrigation, navigation and flood control. We should apply the lessons of our Tennessee Valley experience to other great river basins We must extend our programs of soil conservation. We must place our forests on a sustained yield basis. . .

These are the words of President Truman in his "State of the Nation" message. Emphasis doubtless will be placed on federal activity in achieving these ends. The question is: will the states and private enterprise beat the federal government to the draw by undertaking adequate programs of their own?—or will they stand idly by and bewail the "federal power grabbing" if the nation is "forced" to take over the work they as individuals and groups could and should be doing?

Public regulation of cutting practices on private lands may be an early issue in the Congress. Lyle F. Watts, chief of the U. S. Forest Service, recommends it in his annual report. Rumor in Washington is that a bill will be introduced very soon.

A strong stand was taken against federal regulation by the National Lumber Manufacturers Association at its year-end meeting in Washington. Leading lumbermen claimed that the nation's forests are adequate to meet another national emergency, although it was made plain that the cost to the forest resource would be great. The NLMA Committee on Conservation also brought out that while there were less than 400 technical foresters employed by private industry in 1930, the number today is around 2,500. Improvement of forest practices was cited. For example, better methods of utilization have increased the harvest from timber stands by twenty-five percent in the past two decades.

Congressional committee assignments have been made apparently with a view to pushing the President's program. In the Senate, the Democratic majority on the Agriculture and Forestry Committee will be eight to five in the 81st Congress; the Republican majority in the 80th was seven to six. On the Appropriations Committee, the Democratic majority will be thirteen to eight instead of the twelve to nine advantage held by Republicans last year. Senator Taft has introduced a resolution to add two members to each of the important committees—presumably one Republican and one Democrat. In the House, the Agriculture ratio is seventeen to ten compared to sixteen to eleven for the Republicans in the 80th Congress; in the Appropriations Committee, it is twenty-seven to eighteen instead of last year's twenty-five to eighteen Republican advantage.

Supporters of increased funds for forest fire control will note that Senator Ellender of Louisiana, is a member of both the Agriculture and Forestry and the Appropriations committees. He is an author of one of the bills to increase fire funds under the Clarke-McNary Act. Similar bills to raise the present \$9,000,000 limit for such expenditures have been introduced by Representatives Pickett of Texas, and Allen of Louisiana.

Senator McCarran is back again with bills affecting grazing administration on national forests and on public domain lands. One (S. 2) would provide for the use of twenty-five percent of grazing receipts from national forests for the making of range improvements; another (S. 31) would amend the Taylor Grazing Act to give advisory boards greater participation in administering public domain grazing lands; still another (S. 34) would permit the dissolution of grazing districts when sixty percent of the users so petition. These are the perennial bills, numbered exactly as they were in the 80th Congress. Senator McCarran also has called for a natural resources policy, council and inventory in S. 35.

Other bills of interest: A redwood memorial forest, dedicated to the memory of Franklin Delano Roosevelt, is proposed by Mrs. Douglas of California, in H. R. 796. A similar bill was introduced in the last Congress.

Opposition to the President's expressed belief that the petroleum reserves under the coastal waters must remain vested in the federal government, is indicated by a number of bills to establish state ownership of these underwater resources.

The Hoover Commission received an extension of sixty days in which to make its report on the reorganization of the executive departments of the federal government. Indications now are that it will be submitted in March. In the meantime, leaks in the tight wall of secrecy surrounding the report have revealed that the conservation organizations of both Agriculture and Interior are due for a reshuffling, if the report is accepted by Congress. As in the Hope bill of last year, it is suggested that an overall agricultural conservation agency be established to embody the Soil Conservation Service, the Forest Service and the Bureau of Land Management (now in Interior). Some rumors have it that the Extension Service, Bureau of Reclamation, and Fish and Wildlife Service would be included.

Without waiting for the commission's report, Representative Hope of Kansas, has reintroduced his bill for establishment of an agricultural land and water conservation program.

In response to suggestions from Congress that recreational use of national forests should bring in revenue to offset costs, the U. S. Forest Service will try out, experimentally, on several forests in South Dakota, Wyoming and Colorado, a plan to collect fees for camping and picnicking. Rates will be nominal—fifty cents for a carload of six campers, twenty-five cents for a carload of picnickers. In the past, charges were made only for unusual services such as the sale of split firewood, use of lockers at bath houses, etc. If successful, this may help to make national forest administration show a net cash income. It almost does now (see page 36).

Benjamin Franklin in his famous diary records his quenching his thirst from the Delaware River at Market Street wharf, Philadelphia. Have you had a drink of Philadelphia?
(Turn to page 43)

now



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WATTS REPORTS ON THE NATIONAL FORESTS

TERMING the 152 national forests the nation's "largest tangible accomplishment in forest conservation," Lyle F. Watts, chief of the U. S. Forest Service, in his annual report for 1948 foresees these vast public timberlands playing "an increasingly important role in the nation's economy."

He placed the gross area in national forests today at 229 million acres. Excluding non-government holdings within national forest boundaries, the net area is 180 million acres of forest and wildland.

While the central theme of Mr. Watts' report is the national forests, he also reviews the forest situation in the nation as a whole. Thus among his recommendations is a federal-state plan for control of timber cutting and related practices on private land; increased public aid in fire protection and insect and disease control; increased technical advice and assistance for forest owners and processors of forest products, especially small enterprises; public aid in the development of cooperative management and marketing associations of forest owners; provision for long-term, low-interest loans to help finance timber-growing enterprises; and more research on problems of timber growing and forest management.

Reviewing the national forest record for 1948, Mr. Watts brought out that timber cut on these public forests amounted to more than 3,750,000,000 board feet, almost treble that of a decade ago. With more roads to open up inaccessible stands and with more personnel to supervise the sales, he believes that the annual cut can be increased to at least six billion board feet.

In the operation, management and protection of the national forests last year, the Forest Service spent around \$32,000,000. National forest receipts

totaled nearly \$25,000,000 from timber sales, grazing fees and miscellaneous sale of minor products, special use permits, etc. When it is realized that in addition the national forests provide recreational facilities, for the most part free of charge, hunting and fishing for more than four million sportsmen annually, and untold values in watershed protection, it becomes clear that the service is more than paying its way with the expenditure of less than one-hundredth of one percent of the tax dollar.

In addition to more access roads, Mr. Watts sees a need for more personnel to prepare and supervise timber sales, more timber stand improvement work, more planting, and more intensive control of forest insects and diseases.

Other needs include the building of fences, developing water supplies, improving stock driveways, controlling destructive rodents, eradication of poisonous plants and reseeding of lands used for grazing domestic livestock.

In many areas, he reports, there is a need for wildlife habitat improvement, and in others for ski trails, camping and picnic grounds and safe water supply for recreationists.

Watershed improvement work is also needed on critical areas. In forest fire control, the need is for towers, improved communication systems, roads and trails. For the latter, plans are for 37,000 miles of roads and 21,000 miles of trails as yet unconstructed and needed improvements on 103,000 miles of roads and trails now of unsatisfactory standard.

While under the administration of the Forest Service, not all national forest land is free from the whims of other administrators. Around 155 million acres are public domain land on which, for example, reclamation projects could back up water without the consent of the Secretary of Agri-

culture, or without giving him voice as to whether or not important public values were being destroyed. Similarly, the Secretary of the Interior might lease national forest lands for the exploitation of certain minerals without the consent of Agriculture. Such dangers put some of the national forest areas on an insecure basis for sustained-yield management. Mr. Watts seeks a way in which the various uses of the land might be weighed and reconciled.

Of the forty-nine million acres of private land within the national forests, Mr. Watts points out, around thirty-five million should be added to the national forest system.

Public forests—federal, state and community—while playing an important part in the nation's timber, water, soil and other natural resource economy, cannot do the whole job alone, Mr. Watts emphasizes, since they comprise only a fourth of the country's commercial forest land. And while many lumber companies, pulp and paper companies and other industrial and individual owners of forest land are applying sound forestry practices, the Forest Service chief indicated that advancement along these lines has not been sufficient. According to Forest Service estimates, he said, only eight percent of all timber cutting practices on private lands are "good or better." Twenty-eight percent are "fair." Sixty-four percent are "poor or destructive."

In proposing a plan for regulation of forest cutting practices by states, with basic national standards and federal financial assistance, Mr. Watts claims that private forest land resources as a whole are on the downgrade, that timber is not being grown as fast as it is being used, that millions of acres of forest lands are now poorly stocked or non-productive and many forest areas are seriously deteriorating from a watershed standpoint.

When Forestry Education Began

(From page 19)

popular course and attracted many students. The school was discontinued in 1912.

The Yale School of Forestry was established in 1900, through an endowment gift to the university by the Pinchot family. The school was designed for college graduates. The course covered a period of two years, including a summer term, and led to the degree of Master of Forestry. The summer term was conducted at Milford, Pennsylvania, on the estate of James W. Pinchot.

I was selected as director, later called dean, of the school, and had as my associate, James W. Toumey, a former colleague in the Division of Forestry in Washington. Gifford Pinchot and Professor William H. Brewer were members of the Governing Board. During the first two years the teaching of technical courses in forestry was carried largely by Professor Toumey and myself.

The university furnished a building and there was full cooperation by other departments in providing instruction in fields basic to forestry. Professor Brewer gave a course in physiography and meteorology, and Edward A. Bowers a course in forest law. There were also short courses by visiting lecturers, including A. D. Hopkins in forest entomology, Hermann von Schrenck in diseases of trees and timber preservation, and F. H. Newell in forest hydrography. The summer sessions at Milford offered opportunity for campfire talks by Gifford Pinchot and other leaders in forestry.

By 1906 increase of endowments made possible the enlargement of the staff by the appointment of Herman H. Chapman and Ralph C. Hawley, both graduates of the school, and Ralph C. Bryant, an early graduate of the State College of Forestry at Cornell—men who played a significant part in developing the institution during subsequent years.

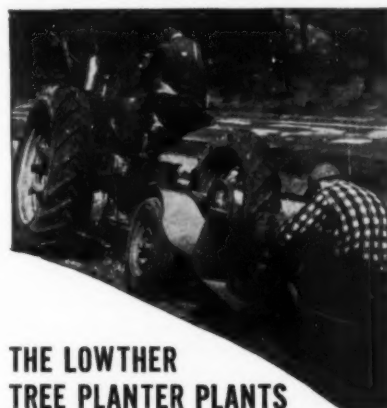
Meantime other institutions inaugurated instruction in forestry in the following order: University of Michigan, University of Maine, and Pennsylvania State Forest Academy at Mont Alto in 1903; Harvard University and the University of Nebraska in 1904; University of Minnesota and Colorado College in 1905; Pennsylvania State College and University of Georgia in 1906; University of

Washington and State College of Washington in 1907; University of Idaho in 1909; and Oregon State College in 1910. It was in 1910 that Cornell University reestablished instruction in forestry.

Then came the New York State College of Forestry at Syracuse, University of New Hampshire, and Colorado Agricultural College in 1911; Iowa State College and the University of Missouri in 1912; and the University of Montana and University of California in 1914. Other institutions followed in later years. The early schools in Canada were organized at the University of Toronto in 1907, New Brunswick in 1908, and Laval in 1910.

A conference of forestry schools was held in Washington in December 1909, at which fifteen institutions were represented. The papers presented at the meeting set forth the broad objectives and standards of educational preparation in forestry, and the special training needed by forest rangers and woods foremen.

(Turn to page 40)



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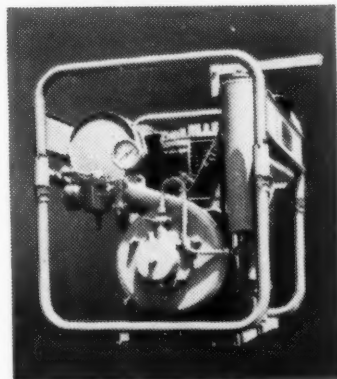
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NEWS IN REVIEW

The Council of the Soil Conservation Society of America recently adopted a national land policy statement which broadly recommends that all land should be used in a manner which will insure its continued and permanent maximum productivity and values. It recommends an inventory of all physical land resources with an ultimate goal in land use of a complete soil and water conservation program on every farm, ranch, forest and watershed throughout the country.

The Chamber of Commerce of the United States has announced that G. Harris Collingwood has joined its Natural Resources Department as forestry consultant. Formerly forester for The American Forestry Association, Mr. Collingwood more recently has been associated with the Hoover Commission on Organization of the Executive Branch of the Government as research director for the Committee on Agricultural Activities.

With the Chamber of Commerce he will spearhead a program to stimulate greater activity in forest conservation among local chambers of commerce. Cooperating in this program are The American Forestry Association and the American Forest Products Industries, Inc. The first regional meeting will be held at New Orleans February 10, 11 and 12.

A six-year research plan aimed at better utilization of available timber resources in Sweden was proposed recently by Professor Erik Hagglund, head of the Swedish Wood Research Institute in Stockholm. This step was deemed of paramount importance in view of the fact that no hope can be seen for an increased yield from Sweden's forests within the next thirty or forty years.

Idaho, Georgia, Wisconsin and New York produced 1948's national 4-H Club winners of forestry scholarships, worth \$200 each. Miss Pearl Gibson, eighteen-year-old freshman at the University of Idaho, earned the western award by directing 4-H Club forestry work in her home community of Preston, Idaho. Specialized studies in the field of naval stores helped sixteen-year-old Dick Tucker of Tifton, Georgia, win his scholar-

ship. Harold C. Davidson, Eau Claire State Teachers College sophomore, won honors by establishing and operating a highly successful tree farm operation. Work on the woodlot owned by his father paid off for Stewart Brand of Malone, New York.

The annual kill of waterfowl in Mexico is probably less than five percent of the total yearly take in the United States, according to the findings of Albert M. Day, director of the U. S. Fish and Wildlife Service. Mr. Day visited Mexico in December to confer with officials on means of enforcing laws issued under the U. S.-Mexican treaty of 1936, to protect migratory birds and game mammals.

President Truman was in Missouri, but the lighting of the National Community Christmas Tree on the south lawn of the White House again drew thousands of people this year.

The delightful custom was originated by The American Forestry Association in 1922—the first tree being lighted by Calvin Coolidge. Today the ceremony is sponsored by a Committee on the National Community Christmas Tree. Officers of the executive committee are Miss Sibyl Baker, District of Columbia Recreation Department, chairman; S. L. Frost, The American Forestry Association, and Edward Kelly of the National Capital Parks, vice-chairmen.

The State Legislature of Washington has been asked to provide \$75,000 for an inventory of the un-



A. Rowe, National Park Service
The President's "Tree of Light"

used forest and mill material in that state to be supplemented with funds solicited from private sources. New plants to process forest products waste will be a possibility of the proposed survey.

The retiring president of The American Forestry Association, William S. Rosecrans, was one of nine Californians to receive the Conservation Award by the California Conservation Council recently. The award was presented "in recognition of long-continued, generous and effective service to the people of California in the field of conservation education, and in appreciation of far-seeing leadership in the effort to promote cooperation in, and understanding of, conservation practices." Mr. Rosecrans is chairman of the California Board of Forestry.

"Today's Problems, Tomorrow's Tragedies?" has been selected as the theme for the fourteenth North American Wildlife Conference to be held March 7, 8 and 9 in Washington, D. C. Indications point to an all-time attendance record for this annual international conservation assembly, say officials of the sponsoring Wildlife Management Institute. Last year's meeting at St. Louis was second only to the first gathering called at the request of Franklin D. Roosevelt. That meeting was also held in Washington.

Dr. Gustav A. Swanson, head of the Department of Conservation at Cornell University, Ithaca, New York, will serve as conference summarizer.

Professor F. S. Baker on January 1 became the dean of the School of Forestry at the University of California. He had been serving as acting dean of the forestry school since the retirement of Walter Mulford. A member of the staff for more than twenty years, Professor Baker previously had served with the U. S. Forest Service.

Private forestry consultants in the United States have organized a National Association of Forestry Consultants to develop and expand their work and raise professional standards among that group. Officers include Edward Stuart, Jr., Virginia, chairman, and Alexander L. Setser, Tennessee, secretary-treasurer. Robert Moore of Pennsylvania, John Tillinghast of West Virginia and Don Canterbury of Texas, will serve as a committee on objectives and organization. J. A. Whitman of North Carolina, was appointed chairman of the membership committee.

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In the Caravan as it left the State Fairgrounds at Louisville, were farm tractors with disc plows, crawler tractors with root rakes, power graders and many other pieces of equipment.



A view of the H. M. Fannin farm at Ezell, Morgan County, with some of the terraces and diversion ditches in the foreground.

Sponsored by the Kentucky Association of Soil Conservation District Supervisors and with the cooperation of the U. S. Soil Conservation Service, Kentucky Division of Soil and Water Resources, State Extension Service, State Division of Vocational Agriculture, and many other state and local groups, a Conservation Caravan toured the state during the month of October making twelve stops and holding twelve Conservation Field Days, at each of which an interested audience saw a complete demonstration of the latest types of equipment carrying out the latest soil and water conservation practices.

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Austin Cary Forest

(From page 32)

oak ridge as well as on a 150-acre burn which occurred shortly after the property was acquired. Work is also being started on eradication of sawtooth palmetto and gallberry which have threatened to choke out natural reproduction in large areas of the forest.

Frequent measurements indicate a satisfactory growth record, permitting under the recommended harvesting cycle an income sufficient to make the forest debt-free at an early date.

A rotation of sixty years and a cutting cycle of ten years is planned for the main body of the pine forest, with natural seed reproduction. Experimental areas of "clear cut and plant" will be tried on a thirty-year rotation for pulpwood. Other experiments will be devoted to naval stores, different degrees of thinning and other projects.

Yes, Austin Cary would be pleased with progress being made in "his" experimental forest.

When Forestry Education Began

(From page 37)

One of the most important resolutions passed by the conference recommended the appointment of a committee to formulate standards of education in forestry. A preliminary report was presented at a conference in Washington in December 1911. The final report was published in the *Forest Quarterly* in December 1912. The following paragraph of the report, on the need of high standards in forestry education, is of interest as showing the objectives of the schools at that time:

"The standard of professional training in this country, if it is to meet the country's needs, must be high. The profession of forestry is at present still in the process of formation and crystallization. In his pioneer work, the professional forester will be called upon not only to do a great variety of technical work, but also to develop the science of forestry itself. To do this efficiently he must be trained to develop methods of forest management suitable to our con-

ditions, to apply these methods to actual management, and to educate the people to the need for forest management. The development of far-reaching policies in constructive management of government, state and private forests will depend upon the wisdom and foresight of the professional forester. Upon the forest schools rests, therefore, the responsibility not only of training men in technical forestry, but of creating a body of professional men who can formulate the principles and to do the constructive work required by our conditions. The rapidity with which the science and practice of forestry develops, and the quality of the work done, will depend on how the forest schools meet their responsibility."

The profession of forestry has from the beginning attracted men of ability and foresight. Frequently graduates of the schools, whose first work involved simple standards of practice, felt that their school preparation was unnecessarily elaborate, and that one year of practical instruction would have sufficed. But these men soon were moved to positions of higher responsibility in which their educational background counted largely in developing forestry in its many diverse aspects.

I pay high tribute to these early foresters and to those that followed them, for their part in constructive development of forestry that today is given wide recognition as a fundamental feature in our national economy.

(This article was originally presented by Dean Graves at the national meeting of the Society of American Foresters at Boston, in December)

Japan's Fuelwood Problem

(From page 17)

lages can be attributed to this ability to glean wood wherever possible. It is not an uncommon sight to see women with long bamboo poles knocking down the dead branches of standing trees to get enough firewood for the next family meal.

America's B-29's opened up a new source of fuelwood for the residents of Tokyo, Osaka, Yokohama and Nagoya, where damage to trees by incendiary raids was heavy. The dead and dying trees were salvaged for this purpose by the city Charcoal and Firewood Distribution Association and included in the pool for local fuel rationing. Tokyo was able to salvage 1,011,027 bundles of firewood, enough to supply 67,000 Tokyo families for a year.

From the silvicultural standpoint, the fuelwood forests are unique in that sixty-three percent are in coppice stands, and the rest in pine. The coppice stands are primarily oak, followed by birch, beech, maple, and cherry in order of their importance. Some coppice forests have been in use for as long as seventy years, and still sprout vigorously after every cutting. Certain species can produce good quantities of firewood as early as fifteen years, but on an average the age of cutting is from twenty to twenty-five years. At that age they yield from 5,000 to 8,000 bundles of firewood a hectare (two and a half acres).

The great demand for firewood during the war years—from 1937—has been the cause for many stands to be cut on a shorter rotation than wise forestry practice would dictate. Even though firewood production is ideally suited to close utilization of slash and twigs, it is estimated that only twenty percent of the wood source comes from slash and milling waste.

It is easier to clear-cut a hardwood coppice stand than to travel long distances into the mountains where logging operations are in progress, work the slash into firewood, and then have to worry about transporting the bundles to the nearest village. The lack of trucks and even wagons for hauling forest products is acute, so that the areas close at hand are utilized first and most frequently. This accounts for the large amounts of coppice forest in the immediate vicinity of villages.

Production of firewood is hinged directly onto the food situation in Japan. It is the biggest single factor that affects production. In areas where food is plentiful, the fuelwood quotas are normally met; but since these areas are relatively few in number, the whole picture is not too bright. Of the forty-six prefectures or "states" in Japan, ten can supply their own needs for fuelwood but cannot export; eleven more produce some fuelwood but are dependent on import for the majority of their needs. The remaining twenty-four produce sufficient amounts for their own needs and can export excesses to fuel-needy prefectures.

The average family can readily use from ten to fifteen bundles a month—especially, in the northern prefectures. However, in the past few years they have had to be satisfied with much less. If their food supply remains critical, and transportation facilities are not improved, the chore of keeping the home fires burning with firewood will remain a big problem for a long time.

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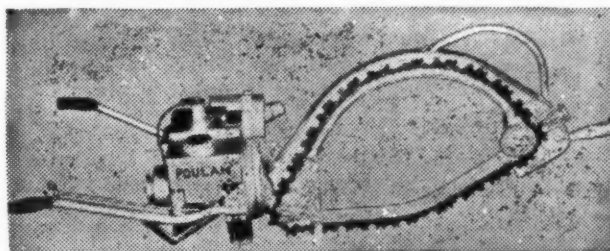
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PLANTS, by Herbert S. Zim. Published by Harcourt, Brace and Company, New York 17, New York. 386 pages, illus. Price \$3.50.

Dr. Zim opens up new and interesting fields for plant amateurs in his book which gives a clear picture of the plant world—classifications and identifications—and makes a practical survey of hobby activities in the plant kingdom. With simple equipment, there are endless things an amateur can do whether it is making a seaweed collection or experimenting with new chemical hormones which stimulate plant growth. A geographical list of places in the United States which are of particular interest to plant enthusiasts is a feature of the book, as are 121 black and white drawings by John W. Brainerd, who is also a botanist of note.

BIRDS OF ARCTIC ALASKA, by Alfred M. Bailey. Published by Colorado Museum of Natural History, Denver. 317 pages, illus. Price \$4.50.

This report of the Colorado Museum of Natural History makes available a compilation of all that has been published on the various species of birds from the Arctic slope of Alaska during the past one hundred years. It is an historical sketch and a narrative of the expedition of the Colorado Museum party to the islands of Bering Sea and along the Siberian shores. Also there is a chapter by Joseph Ewan on vegetation of the region.

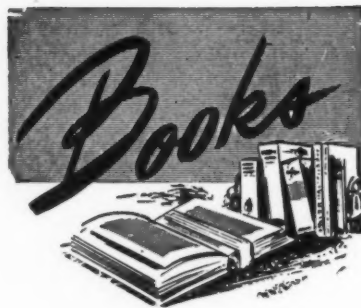
More than two hundred species and subspecies of birds are listed and the illustrations are field photographs by the author.

GUIDE TO EASTERN FERNS, by Edgar T. Wherry. Published by the University of Pennsylvania Press, Philadelphia. Illus. Price \$2.

This is a pocket-size non-technical guide for use in identifying ferns and fern allies from Pennsylvania and New Jersey to Virginia. Data on each species are presented under the headings: history, features, habitat, range and remarks. The detailed drawings included will be found most helpful.

GUARDIANS OF THE FOREST, by Stacy Klingsmith. Published by Dorrance & Company, Philadelphia 6, Pennsylvania. 175 pages, illus. Price \$3.

Beautifully illustrated, this book on tree lore and the out-of-doors is for nature lovers of all ages and should prove especially beneficial to



boys and girls interested in studying trees. The book is written in the simple form of a diary regarding walks in the woods of "Tree Club" members. One rule of the club is that each member must adopt and look after a tree. Several years ago the author decided to devote her time—as a hobby—to boys and girls who wanted to know more about the out-of-doors and became an adviser to the Girl Scouts, the Camp Fire Girls and a leader of a Junior Audubon Society. This book tells of some of her experiences.

POISONOUS DWELLERS OF THE DESERT, by Natt N. Dodge. Published by Southwestern Monuments Association, Santa Fe, New Mexico. 44 pages, illus. Price 50 cents.

One by one, the author describes the poisonous creatures of the southwestern desert country, including both those whose bite or sting is painful but not serious and those capable of dealing severe illness or even death. Methods of poisoning, effects, and treatment are outlined. Included are the giant desert centipede, scorpions, black widow spider, tarantula, kissing bug, ants, wasps and hornets. Poisonous reptiles described are the Sonoran coral snake, the various rattlesnakes, back-fanged snakes and the Gila monster. A special section deals with harmless creatures often believed to be poisonous.

SKY DETERMINES, by Ross Calvin. Published by the University of New Mexico Press, Albuquerque. 333 pages, with illustrations by Peter Hurd. Price \$3.50.

This is a kind of essay on the sky, air, sand and cactus of the Southwest. But most important is the sky, says the author, in determining the history, cultures of the people who have lived there, and all other things in that region. So the pageant of New Mexico's past is presented as it has been affected by the elements.

THE HEALTHY HUNZAS, by J. I. Rodale. Published by Rodale Press, Emmaus, Pennsylvania. 263 pages, illus. Price \$2.75.

The author compares the Hunzas and their domain to the people and valley of James Hilton's *Lost Horizon*, and indeed there seems to be some similarity. The Hunzas practice organic gardening and live by an ancient wisdom which surpasses our own in producing healthy people. Their ways of doing this are very interesting and anyone, whether he tills the soil or not, would do well to consider them.

EDUCATORS GUIDE TO FREE FILMS, 8th Edition, 1948, by Educators Progress Service, Randolph, Wisconsin, 345 pages. Price \$5.

An up-to-date listing of free educational, informational, and entertainment films of value to educators, agencies and organizations using motion pictures. This edition lists 1,632 titles of films and 342 slide films covering conservation, applied arts, fine arts, science, geography and many other subjects. Thirty-two films on forestry and twenty-four on recreation are among those listed.

THE USE OF AERIAL SURVEY IN FORESTRY AND AGRICULTURE, by J. W. B. Sisam. Published by the Imperial Forestry Bureau, Oxford, England. 100 pages, illus. Price seven shillings six pence.

Mr. Sisam, until 1945 director of the Imperial Forestry Bureau and now associate professor of forestry at the University of Toronto, has written this paper with an eye to post-war land use in the Colonies but the information he presents regarding aerial survey methods is of practical interest in the United States as well. Primary purpose of the writer is to bring readers up to date on the several uses of aerial survey as applied to agriculture and forestry, interpreted in the light of progress made in this line during the recent war.

The author lists and explains the various types of photographs that may be taken from aircraft and then shows how various countries are making use of these methods in carrying out agricultural and forestry projects. For example, he explains the five methods of forest survey now being practiced in the U.S.S.R., considers the work being done in such tropical areas as New Guinea and Burma, touches on Rhodesia, and writes of aerial work in the Rocky Mountains of this country.

SOILLESS GROWTH OF PLANTS, by Carleton Ellis and M. W. Swaney (second edition revised and enlarged by Tom Eastwood). Published by Reinhold Publishing Corporation, New York City. 265 pages, illus. Price \$4.75.

Gains in commercial experience with soilless culture of crops since the first edition of this work in 1938 necessitated a complete revision of the text-book. The book opens with a brief discussion of plant physiology, followed by chapters on the general types of soilless growing—water culture, sand culture and gravel culture—techniques, construction and an outline of operations required to run a soilless unit. Chapter six discusses theoretical and practical problems involved in preparing nutrient solutions. Chapters eight, nine and ten, probably the most important in the book, endeavor to impress upon the soilless culture operator that the actual culture of the plant is still the most important phase of crop production, regardless of the culture method. Chapter eleven deals with special means of plant culture which are particularly well adapted for soilless methods and the last chapter fills a need for the practical grower.

THE SCIENTISTS SPEAK, by Warren Weaver. Published by Boni & Gaer, Inc., New York City. 369 pages. Price for special educational edition, 10 copies for \$15—to educational institutions only.

Edited by Warren Weaver, this book is the work of a large number of specialists in various fields of science. Individual papers cover such subjects as the science of the earth, the science of the sky, new materials and improved processes, new chemicals, atoms and molecules, physics and mathematics, chemistry, plants and animals, health, social sciences, and long-term values.

THE GREYSTONE NATURE LOVER'S TREASURY, selected and edited by Marshall McClintock. Published by Greystone Press, New York City. 790 pages. Price \$3.50.

Over eighty of the world's best authors are represented in this collection of more than 100 nature stories. Included are three novelettes and some verse. Subjects are varied—birds, encounters with wild animals, sea voyages, Indians, explorations, the Arctic, marvels of insect life, hunting and fishing, mountain-climbing, adventures, and others.

Washington Lookout

(From page 34)

phia's evil-tasting, foul-smelling water this winter—water taken from the Delaware far above Market Street and treated at the city's filtering plant? This is the progress of 200 years of "civilization." Reports are that ships' captains are avoiding the port of Philadelphia because of the water conditions. The Delaware is cited as an example. Maybe Representative Philips of California, wasn't joking when he introduced a bill (H.R. 265) for the establishment of demonstration plants to produce potable water from sea water or other liquids, elements, or substances.

What is needed, however, is adequate anti-pollution measures.

At long last, the Department of the Interior has filled the position of Chief of the Forestry Division in the Bureau of Land Management. Walter Horning, regional administrator of the Bureau at Portland, Oregon, has come to Washington to take over. While no great changes in policy are anticipated because of the change, action programs, difficult to attain without recognized leadership, are hoped for.

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New A. F. A. Officers

(From page 24)

D. C., president of the Advertising Council, Incorporated, and Kent Leavitt of Millbrook, New York, president of the National Association of Soil Conservation Districts. They succeed O. D. Dawson of Texas, and G. F. Jewett of Washington.

Twenty-one honorary vice-presidents were also elected.

Mr. Spurr, president of the Monongahela Power Company since 1935, is a founder and secretary of the Upper Monongahela Valley Association, chairman on the Committee on Agriculture of the West Virginia Chamber of Commerce, and one of the founders and chairman of the Advisory Committee of the West Virginia Forest Council. He has two degrees from Yale University, an honorary degree from Waynesburg College, and is now president of the Board of Governors of West Virginia University.

Mr. Christie, a native of Pennsylvania, has been associated with Riggs National Bank in Washington since 1935, with the exception of five years' service as a naval lieutenant in World War II.

Mr. Repplier, president of The Advertising Council, Incorporated, since 1946, was campaign manager of the War Manpower Commission in 1942, and later served with the War Advertising Council. Prior to the war, he held positions with the Chesapeake and Potomac Telephone Company and the advertising agencies of Ewing, Jones & Higgins and Young & Rubicam. Last March he was awarded the gold medal presented annually by *Advertising & Selling Magazine* for "distinguished services to advertising."

After three years in banking and five in the consular service, Mr. Leavitt took up farming and has become one of the outstanding soil conservationists in the nation. Since 1935 he has been engaged in developing Fraleigh Hill Farm which spreads over 400 acres in the uplands of Dutchess County, New York. He is a member of the New York State Soil Conservation Committee by appointment of Governor Dewey, and was recently elected president of the National Association of Soil Conservation Districts.

Sideline Forestry

(From page 30)

tion—red pine in understocked and open areas. Thinnings on a few acres of dense young jack pine are being undertaken this winter in order to discourage insect depredation.

In north central Wisconsin, Jim Boyd has a beautiful 2000-acre forest of virgin hemlock and northern hardwoods on his Mason Lake resort. Although Boyd has a mill capable of cutting 25,000 board feet a day, he operates only a short time each year on trees salvaged from his lands. With his power saw and tractor, Jim can pick up the dead and fallen timber anywhere in his woods. Small skid roads make any part of his tract accessible to a lake in the center of his holdings, so hauling logs over the ice is a common sight on Mason Lake.

Such examples are not limited to Wisconsin. On Cape Cod in Massachusetts, cranberry growers have for years been producing pine trees on sandy lands around their marshes. It's a perfect combination of multiple land use—lowlands for growing cranberries and uplands to produce box lumber to ship them to market.

Iron mining companies in northern Minnesota and Michigan, have for some time been buying pit props, ties and rough lumber on the open market. But recent high prices and shortages of timber products encouraged many to start producing lumber from lands covering their ore deposits.

They are beginning to realize a tidy income from the sale of pulpwood poles while saving money on their own timber requirements. Sustained yield forestry is definitely under way in the holdings of the Oliver Mining Company, the Copper Range Company and several others where foresters have been employed to supervise these interests.

Intensive forestry by sideline forest landowners seems to be coming to the fore. As good timber becomes scarcer, these owners who are not pressed for immediate cash realize that it pays to utilize their otherwise idle lands for growing and marketing timber. The contrast in appearance between these tracts and the surrounding lands will become more apparent as the years go by.

Forests in Ferment

(From page 16)

world. Teak has been grown in many countries with the high hope of reaping a rich harvest of valuable ship-building timber in a short time. Few, if any, have yet approached the growth rate of Nilambhur.

Just as foresters copied India's pioneering efforts in teak planting, so also did the India Forest Service provide the pattern of effective forestry organization. When India consisted of what are now Pakistan, India and Burma, a forest policy, growing out of successive recommendations over a thirty-year period beginning in 1826, was outlined in 1855 as the Charter of the Indian Forests.

Dr. Dietrich Brandis, a German, was appointed by the British government as the first scientifically trained forester in India, to take charge of the forests. He established the system of forest conservator, divisional forest officer, rangers and deputy rangers to administer the forest reserves.

For a quarter of a century he set a high standard of professional competence in making surveys, in estimating growth, in starting working plans, in government logging, in sale of logs as well as standing timber to private loggers. He set up organized fire protection, adapted the native roving agriculture to what is now known as the *taungya*, or crop-and-forest-tree rotation system, and he applied the sustained yield idea to forest management. His accomplishments earned him the title of "Father of Indian Forestry", and the British government gratefully knighted him Sir Dietrich Brandis.

Gifford Pinchot early became interested in Sir Dietrich's principles, methods and standards. In fact, these formed the basis for organization of the U. S. Forest Service, of which Pinchot was the first chief.

Sir Dietrich, of course, was succeeded by British foresters—and now Indian foresters are taking their places. At Dehra Dun, for example, the entire staff of the Forest Research Institute as well as the faculties of the Forestry College and of the Ranger School, consist of Hindu foresters. The work at Dehra Dun, particularly on problems of better forest management, of more complete utilization and improved preservation of wood is vitally important not only to India, but to Pakistan and Burma.

The magnificent buildings at Dehra Dun in their inspiring setting

between the Siwalik Range and the Himalayas, the excellent museums, herbariums and wood specimens, the library and photograph collections and the outstanding corps of teachers and research workers form an island of encouragement in a seething sea of unrest. When the ferment has subsided, the new foresters, educated in the precepts of Brandis and many others, will be ready to apply research results in the forests of their countries.

I had gone to Dehra Dun depressed over the magnitude of the problem of so many people with so little forest land. But after my visit I felt much more hopeful. The college and the research institute are turning out foresters and research results that some day should help those poor wretches who are now without homes.

The Malabar region of South India gave me a chance to observe the importance of elephants in forest work in that part of the world. The provincial conservator met me at Mysore after an air trip from Delhi, and we were inspecting second growth hardwood country when an excited bicyclist approached.

In what seemed like one continuous motion, he dismounted, leaned his bicycle against a tree, took a wad of green cloth out of his shirt, wound it into a forest guard's turban around his head and saluted stiffly. Then followed an excited conversation about a pregnant cow elephant which had been captured in a pit trap.

We decided to visit the trap, and on the way the conservator told of his work in trapping and training wild elephants, which were sold to private logging operators. In fact, his forest produced more revenue from the sale of elephants than it did from sawlogs and firewood.

We arrived at the pit in time to witness the highly fascinating drama of rescuing the trapped animal. The procedure included all the trappings of a "poojah" chanting ceremony, a ritual of lighting joss sticks and presenting the elephant with split coconuts in an attempt to appease her, and finally maneuvering the beast into position so she could be lassoed and hauled out of the pit by tame elephants.

Later the head elephant man proudly showed us ten high enclosures, each holding a newly captured elephant. All had been taken by the

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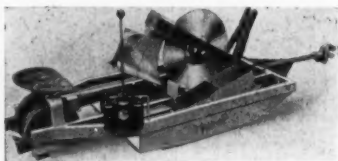
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pit method, but the head man explained how in his time he had captured entire herds by the "keddah" system of driving them into a palisaded enclosure and dropping a gate behind them.

After a few weeks of hand feeding and watering, wild elephants can be ridden when chained to trained elephants. From one to two years of patient work are needed to make loggers out of the creatures. Elephants reach maturity at about twenty years, do their most productive work between twenty-five and forty-five and are retired between sixty and seventy years.

On numerous occasions I endeavored to develop in conversation with operators a comparison of elephant and tractor logging. As might be expected I found no middle-road between the elephant men and the few tractor-minded owners and office men.

No one will argue, however, that the most skillful American "cat-skinner" wheeling a logging arch

through the timber, can approach in picturesqueness the ambling elephant, with a tousle-haired Sabu on his neck to tickle the flopping ears with bare toes, dragging logs, pushing them with his front or rear feet, or with his head, or lifting logs or timber with his trunk.

At Calcutta I visited sawmills which worked up teak squares from Burma into high-grade lumber. Here, as in other sawmills in India and most of the Orient, the tremendous amount of hand labor performed without regard to safety precautions left me breathless.

After flying to Rangoon, my bare-footed climb up the crowded steps of the Shwaydagon pagoda was rewarded by the sight of beautifully carved teak panels and timbers. I forget how long these had been there—but long enough to confirm teak's reputation for outstanding durability. The fame of teak for ship decking, for railroad ties and bridge timbers is well known, of course.



"If they could only tell us where it hurts"

The Burmese foresters were justly proud not only of the many fine qualities of the teak they produced on their national forest reserves, but also of their scientific methods of management of this valuable species. According to their carefully developed working plans in the Irawaddy River drainage, they select and mark the trees above a certain girth limit and have them girdled near ground level three years before actual felling. This allows the heavy teak to dry out sufficiently to float in the streams.

The rivers carry heavy loads of silt as a result of frequent burning and clearing in the shifting cultivation of the hillsides. To keep the channels clear for log transport, Burmese for many years "trained" small streams to deposit silt in self-made river banks. British forest engineers studied their methods, applied them on a large scale, and teak logs now move more readily from the reserves down to Rangoon and other inspection stations and log depots.

Formerly, the men of the Burma Forest Service were concerned only with the silviculture, management and girdling, and except on selected reserves left actual felling and log transport to the large private teak lessees. The service also administered the inspection stations and held auction on government produced logs at the Rangoon and Moulmein log depots.

Now, however, as the nationalization program gets under way, the foresters are becoming involved in more and more phases of teak production. Additional foresters are therefore needed to meet this bigger and more complex job. Obviously, the shipping and sawmilling ends of the production line are as unsettled as the economic conditions. Because girdling must be done three years ahead of felling, and because river transport may involve two or three years, planning of the forestry work is difficult.

Despite these complexities, the enthusiasm and determination of Burmese foresters to get on with their job are admirable.

In Moulmein, the sawmill men had been told that a United Nations forster was coming in to inspect their plants and it was arranged that I must see each and every mill. And it was not enough just to look at the mills. Each man insisted on showing me as though there was none other like it, every single step in his own mill; the teak logs being dragged

by cable-and-winch out of the river, the large circular break-down saws going through the logs lying wedged up, not dogged-down, on a split steel platform carriage. Each inspection was thorough and endless.

The tour included even the rubble and rusting skeleton of what had been the one modern electrically powered mill in Moulmein, the only one with dry kilns, which had been the unfortunate victim of a near-miss bomb aimed at Moulmein's railroad station during the war. As a reward for all this repetitious inspection, the Moulmein Lumber Manufacturers Association entertained me at tea, during which we held our conference.

A long table had been set up in the shade of a thatched lean-to in the lumber yard at the largest mill. On a flowing white linen cloth were plates of pink and green iced cakes, highly seasoned meat sandwiches and biscuits and, of course, cups of tea. The mill owners wore a variety of costumes.

There were Hindu owners dressed in white sheets and white turbans; Burmese men in short black silk jackets, brown *longees* or wrap-around skirts, and tightly wound bright colored silk head kerchiefs; several Chinese wore light blue or white pajamas, with no head coverings; one Chinese engineer educated in the United States and several foresters trained at Oxford dressed in western clothes; and the British pilot who had flown us in the government plane from Rangoon wore khaki shorts and shirt.

Mention should also be made of the cows and bleating goats that looked over our shoulders or nudged our feet under the table in search of crumbs, and the myriads of flies that took over as though they owned the place. Despite this competition, we managed to eat and make ourselves heard.

The Chinese engineer, who was employed by the association as a technical adviser, did the interpreting. He knew his business as a sawmill man and had ideas about use of electricity for power and new machinery layouts and techniques that really would have modernized these teak mills. He told me he was having a difficult time persuading his employers, the members of the association, to make any change except when something broke down and had to be replaced.

I tried to help him by suggesting to the mill men that high-priced foreign markets awaited any shipper who



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could provide well-sawed, dressed and properly kiln-dried lumber, but I doubt if I made even a dent in their traditional outlook. It was true that with the present lumber demand, they could sell everything they produced either at Moulmein or Rangoon, or could get almost any price they asked in Calcutta. Besides, with the talk of nationalization of the foreign teak lessees, they were uncertain as to when their own Moulmein sawmills might be nationalized. So why invest any more rupees than necessary?

I was glad I didn't have the job of the Chinese engineer of trying to convince them. All I had to do was to learn what were their problems. And they told me their troubles with what appeared to be great eloquence and emphasis—with good humor, too. But the Chinese engineer and the Burmese foresters were not discouraged. They were sure progress was being made.

Similarly, the attitude of the foresters in the Shan states, the eastern part of Burma in the Salween River drainage, is one of determination and eagerness to expand the soil erosion control work begun before the war. We had driven along the Burma Road almost to Mandalay, had stopped at Pyinmana to visit the forest ranger school, and then had proceeded east over pine-covered

ridges to Taungyi, the Salween River and Kengtung. Everywhere in the steep mountains, smoke and burned forests of bamboo and mixed hardwoods were to be seen. Shifting agriculture was a deeply ingrained custom of the hill tribes that would be difficult to discourage.

During the war, people in the hills had been considered patriotic if they resisted the authority of the occupation forces. Now the Burmese government, through resident officials and the various Sawbwa or Shan chiefs, had not yet gotten around to try to change the attitude of these people.

And even if they had the necessary organization to persuade the tribes or enforce such legislation as does exist, the present unsettled political situation makes most administrators hesitate before embarking on any get-tough policy. The result is that clearing, burning and shifting agriculture continues, and erosion is spreading.

But the Burmese foresters are steadfastly trying to urge the Sawbwaws into educational and demonstration programs. They want to be ready, when the ferment subsides, to advance again on the conservation front.

And I believe they will, too.

(In the March issue, the author will tell his experiences and observations in Siam and China).

Eternal Swamp

(From page 9)

leaving more water space for the game fish. Then, too, the vast inaccessible portions of the swamp were a reservoir for those areas the average fisherman was able to reach.

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AUTHORS

CHARLES ELLIOTT (*Eternal Swamp*) is state game commissioner of Georgia. M. A. HUBERMAN (*Forests in Ferment*) is forester with the U.N. Food and Agriculture Organization. HENRY S. GRAVES (*When Forestry Education Began*), distinguished American forester, is Dean Emeritus of the Yale School of Forestry. CHARLES CLEMENTS (*Vanishing Lands*) is farm editor for Station KXLW in Missouri. JOAN HARVEY (*Those Woodlot Blues*) writes from Newtown, Pennsylvania. CHARLES H. STODDARD (*Sideline Forestry*) of Minong, Wisconsin, is a consulting forester. E. A. ZIEGLER (*Austin Cary Memorial Forest*), is professor of forest management at the University of Florida.

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